

THE  
**SOUTHERN AGRICULTURIST.**

JULY, 1833.

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**PART I.**

**ORIGINAL CORRESPONDENCE.**

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ART. XLV.—*Practical Observations on the reclaiming of Marsh or Rush Land, putting down Trunks in these lands and preparing the land for the seed; by Q. E. D.*

*Mr. Editor,*—It is one of those gloomy depressing days, which induce Englishmen to throw themselves into the Thames, and Frenchmen to resort to the gambling table, but as neither of these resources suit my taste, I have determined to kill the day, and not myself, by asking you a question or two, and communicating to you a few facts, the result of my own observation.

How does it happen, Sir, that the subjects which head this article, so important in themselves, and so essential to the success of those who begin their agricultural life in new lands, are so seldom noticed and so little understood?

Is there a lack of intelligence among our rice planters which prevents them from communicating to you the result of their experience, or is it an unwillingness that others should profit by their labour?

Is there no new land to be brought under cultivation? or is the subject, one of so little importance as not to need elucidation?

It will not be assuming any very great responsibility to answer these questions in the negative. Among no class of our citizens, is there more urbanity and refinement,

more talent and information, a less disposition to secrecy and mystery in their avocations; it is needless to add, that there is no scarcity or deficiency of land to be reclaimed. Within a few years, several hundred acres have been subdued and made productive on Cooper river. Mr. Myrick, (on the estate of Col. Harleston,) Mr. Carson and Mr. John Huger, have each added largely to the arable land on that river. Have not the community a claim upon each and every one of these gentlemen for information on this subject? A detailed account of the process by which they have made fertile and productive, lands which were barren and unproductive, will be valuable to their successors, and posterity certainly have some claim upon us to repay in part the obligations imposed by our ancestors. Each of these gentlemen have embanked large quantities of land, and the information they could communicate would be valuable in proportion to the extent of their operations, for errors are more easily detected, and improvements more easily suggested, under these circumstances than when we are limited and confined in our movements.

I have reclaimed two fields, Mr. Editor, and although my experience and information is much more limited than that possessed by the gentlemen already named, yet, I will give you an account of the means adopted, and hope to correct the errors which no doubt I have committed, when others better qualified than myself shall communicate with you on the subject. The first step in the process was, to clean up on the margin of the river, a space about twenty feet wide around the whole field, so that at low water I could walk over the ground, and select the site or foundation upon which the bank was to be raised. To determine upon the spot would not appear difficult, yet upon no point has there been a greater diversity of opinion, than upon the best position for the bank. Our fathers thought a wide margin essential to a good bank; some that the width of the margin gave strength and stability to it; others that it only afforded an ample supply of materials to keep the bank in order after it was made, thus differing as to 'how,' 'why,' or 'wherefore,' but all agreeing as to the fact that wide margins were essential. This theory, (for it is nothing more) was in practice carried to a great extreme; thirty acres and more of a plan-

tation of two hundred acres being frequently left in marsh for the purpose of repairing banks.

But, Mr. Editor, our fathers lived in times of large crops and high prices and little expenditure; carriages were not so essential to the wives of those days, and King-street did not present so many attractions to the daughters of those excellent old gentlemen. Necessity has sharpened the wits of their sons, and they (after much reflection and numerous experiments) have determined that narrow margins make tighter banks than wide ones, and that thirty or forty acres of river-swamp is more valuable under bank and ditch, than as receptacles for black-birds and their broods. That banks made near the river are more tight and compact than those erected at a distance from it, is an opinion, daily becoming more prevalent, and the *reasonableness* of the thing is so evident, that we are surprised it should have remained to be discovered in our day and generation.

The rice lands, (I allude to those on Cooper river) are for the most part light and composed of vegetable matter, which has for ages been accumulating, and is now entirely decayed. The foundation of these lands is clay, but it will take a long course of cultivation to bring us to the foundation, if (as we all believe) the deposits from the river return nearly as much both to the quality and quantity of the soil as is taken from it by culture. So very light are these lands when first reclaimed, that they yield, to the pressure of any considerable weight, and will form hollows or low spots where such pressure is continued. The weight of a river bank, (such as are made on Cooper river) is very great, and place it where you will the earth settles, and the tendency of the water is to lay at the bottom or foundation of it. If this is allowed to continue, both the bank and the foundation upon which it stands becomes sobbed and rotten, and the bank, of course, is liable to all the casualties which necessarily attend weak barriers opposed to strong forces. Under these circumstances, there are many advantages resulting from narrow margins, which will present themselves to the experienced planter. The land is always more firm and strong as you approach the river than as you recede from it, in consequence of the drain which the ebbing of the tide affords that portion of the land. But if the water does accumulate (or pond,

to use a plantation phrase) about the base of the bank, it is, with great facility drained off. I have heard it urged by those who prefer wide margins, that it is easy to ditch the margin and thus rid ourselves of the evil while we retain the good. If this was true, it would be an answer to my objections only on one point, it would still remain to be proved, that the increased security which the planter enjoys, is such as to compensate him for the abandonment of a sixth or eighth of his rice-land. But it is not easy to ditch a wide margin and keep the ditches open; no man who has attempted it will contradict me, the continual ebb and flow of the tide, the deposits of the river added to the trash always found on the margin, fill up these ditches almost as fast as they can be cleaned, and no attention, (short of the daily use of the spade) will prevent their filling up. I might exemplify this remark in a variety of ways and by numberless instances, but one will be sufficient. Remove a trunk from your river bank, and fill up the gap in the bank, leaving the outside dock open; in a short time deposits commence, and before much time has elapsed, the margin is formed and the excavation is obliterated. But it is useless for me to say more on this subject; it is folly to reason against established facts. Let me not be misunderstood; I speak of banks with narrow margins, not of banks *without margins*, though I do acknowledge that one of the best banks I have ever seen had little or no margin to it.

A margin of ten, fifteen or twenty feet will prove ample for all the purposes of security, and the mud found between this and low water mark, will afford abundant materials for keeping up the banks after it is once made. In addition to all this, we may add, that every field will present irregularities and corners, which (the bank being kept straight) will be left out, and thus add to the means of repairing damages and accidents. Having satisfied myself that a narrow margin is to be preferred and made a careful examination of the site upon which the bank is to be raised, and placed stakes at a width of twelve feet from each other, around the whole space which had been cleared of marsh, rush, &c, the earth within the range of these sticks, including marsh and rush roots, logs, stumps, &c. to the depth of a foot, was carefully taken out and removed to a distance, leaving me an excavation com-



posed of mud remarkable for its adhesiveness and tenacity. This excavation is a substitute for the "centre ditch," which our predecessors thought so essential to a good bank, and it is found to answer quite as well, and is accomplished with comparatively little labour. Mud from below the margin free from all roots, was now brought, and the excavation made as the bottom of the bank was filled up to a level with the surface of the field. So soon as this was accomplished around the whole track, the process was repeated and the bank was raised about a foot, which is higher than common tides will rise on new land; a third course of a foot more will put the bank in a safe condition for a time. But new banks settle very much, and it will be necessary to raise them frequently; this was soon evident in my own, and I put down a small temporary trunk to enable the water to drain and the river ditch to be cut, for from this source the dirt to complete the bank is derived. From the foot of the bank at the distance of thirty feet, I laid out my river ditch five feet wide and four deep, and proceeded to cut it, each man throwing out with ease six hundred square feet of earth, or thirty feet in length of this ditch. The addition of this earth to my bank put it, (to use a homely expression) out of harm's way, and left me quite at ease on the subject under all circumstances, and times, and tides.

I omitted to state that in the raising of my bank, two women with a hand-barrow will raise thirty feet of bank in length, one foot high in the tide; at least, this was the task allotted, and it seldom failed to be accomplished.

The field was now laid out in half acres, beginning at one end and proceeding to the other lengthways, and at each half acre a ditch, three feet wide and three deep was cut; the ditch was not included in the half acre, but was purposely excluded from it. This is a convenient mode of laying out the land, as it enables you to apportion the task to the labourer with facility and exactness. The ditches were cut running with the width and not with the length of the field, as land always drains better, the shorter the distance the water has to travel. The earth from these ditches was used to fill up creeks, low places, &c. and the land was now ready for cultivation so far as banks and ditches could prepare it.

BUT I have occupied so much more of your time and patience, Mr. Editor, on one part of my subject that I had anticipated that it will be best to postpone what I have to say of trunks, and the preparation of land, for another paper.

I remain your well wisher.

Q. E. D.

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ART. XLVI.—*Observations on the Planting of the Vine and Rot in Grapes; by N. HERBEMONT.*

"Columbia, (S. C.) May 28, 1833.

Dear Sir,—I have observed in the number of the *Southern Agriculturist* for the month of March last, a communication from that very interesting and persevering cultivator, Mr. Abraham Geiger, on the subject of the culture of the vine, and particularly on the manner of planting it to the best advantage and least expense; and also on the cause of the rot in grapes, &c. Any thing proceeding from so intelligent a source is highly deserving of full consideration, and my personal regard for this gentleman, ought not, and cannot prevent my defence of modes of planting and culture which I have hitherto defended, because, I could but presume that practices recommended by almost all writers on the subject, must have been thus advocated from a consciousness of honest motives, based on the experience of ages; but surely not with a view of causing "*the culture of the vine to be looked upon as something mysterious*"—and thereby "*contrived and intended to be made difficult and laborious.*" It is very natural for a man who has acquired experience by the practice of a particular art for many years', to imagine that there is no difficulty or mystery attending it. He is also apt to forget that it has probably cost him the labour and observation of years to come to this conclusion. Let any man of any common share of understanding undertake the practice of any art which he has only heard or read of, and simple though it

may be, it will require a number of trials before he can reach the desired object, and find out that there is no mystery or difficulty in the practice.

That there is no more difficulty in the culture of the vine than in that of any other plant, appears evident enough from the scale of intelligence of the common vine-cultivators all over the world where it is cultivated for wine. It cannot be denied, however, that each plant has its peculiar habits, and that it grows, thrives, and is as fruitful as its nature admits, only in soils and situations particularly suited to it. The planting of trees of any sort is certainly a very plain and simple operation, depending *only* on the plain sense and observation of nature in her mode of proceeding, and yet there are, comparatively, but few that perform it in the most suitable manner. The planting of the vine in deep trenches is, I believe, a general practice in Europe; though, probably not equally deep every where; and this, it is fair to suppose is the result of experience. The first person who recommended it clearly, distinctly, and forcibly in the *Southern Agriculturist*, is George J. F. Clark, Esq. of St. Augustine. The evident intelligence and sagacity of that gentleman induce me to examine more fully and critically this subject than I had hitherto done, and the result was a confirmation of my previous views of the subject, according with those of Mr. Clark's and the experience of ages.

The transplanting of trees much deeper than they originally grew, certainly "*is a departure from the order of nature;*" for, "*How often do we see them in their native state, put forth their roots to the surface,*" &c. As Mr. Geiger further very well observes: "*to assist nature and not to depart from, is in my view the correct course.*" This is and has always been the object of the most eminent cultivators, and they have only differed as to the accuracy and depth of their alterations on nature's various processes, by which the clearest-sighted have usually been the most successful. A judicious follower of nature in her operations, avails himself of her willingness to be apparently contradicted, when the opposition is really more in appearance than in reality. He coaxes her and prevails on her to yield somewhat to his convenience, and she is usually found very accommodating in such cases.

Were the vine in a state of culture similarly situated as those in a state of nature, and were the products of cultivation expected to be not greater, or superior in quality to those in the woods, the case would be very different from what we find it. We must, therefore, look into the difference of situations and the objects in view, adapt ourselves to the existing case, follow nature in such a manner as to compensate for conditions which are unsuitable to our aims, and unattainable in our circumstances. Vines in a state of nature, in the woods, grow in shady ground, which is ever covered with the decayed and decaying leaves of the surrounding trees and bushes, and the remains of all other plants that grow in their vicinity, the collection of many years. This covering retains at all seasons of the year a degree of moisture at least equivalent to that which would be produced by some inches of light soil kept clear of grass and weeds, and thus perfectly open to the influence of the wind and sun. The principal roots of the vines in their native state, go as deep in the earth as the nature of the soil will permit, and the upper ones run superficially immediately under the loose bed of vegetable matter that covers the ground. If you clear the ground, cut away all the trees, bushes, and all the other vegetables but the vines, and keep it clear of grass and weeds, the effect will be that the superficial roots of the vines (except the large ones which afterwards sink deep in the ground) will perish, or, if not, will not furnish the vine with its accustomed quantity of moisture for its nourishment with its usual regularity. In wet weather they will furnish a superabundance, and in a long drought none or scarcely any. The consequence of this must necessarily be that, if the plant does not perish, it suffers and languishes till it has accommodated itself to its new circumstances. Many experiments have proved to me that this is the result. The vine (some few delicate kinds excepted) is a very hardy and vivacious plant, and it readily suits itself to any situation that does not too violently oppose its habits. Make a trench three or four feet deep, less if you come to a stiff clay, cover the bottom of it with soil, from the surface mixed with a well rotted vegetable compost, and in this plant good, well grown vines from two to six years old with their roots as entire as practicable; fill the trench only to about eight to twelve inches,



and they will certainly grow well and scarcely feel the effect of their having been transplanted. The greater abundance of water that will thereby be thrown to the roots will greatly promote the growth. Let the trench be gradually filled up in the course of about three years with light sandy soil, and they will be gradually accustomed to this depth, and suffer no root to remain within this depth from the surface; but cut them away every winter at the time of pruning. The consequence will be that the vine will depend on its roots, which are deep in the soil and where the supply of moisture is most regular, never very scanty; for a severe drought is seldom or never found to reach the depth of these roots, and never too abundant; for, water in the longest spell of wet weather, reaches to this depth but slowly and gradually. It may be said that there is some trouble attending this mode of planting; but it must be recollected that when it is done, it is for several hundred years, and that a good thing that lasts so long is not too dearly bought by a little extra trouble. The vine is very seldom, if ever, seen to suffer from drought. Its deep roots pump the moisture from far below the surface, and its abundant leaves imbibe it from the vapours of the atmosphere, which they probably condense by their coolness; so much so, that in the driest weather, when every plant in its vicinity is destitute of dew in the morning, a drop of it may be seen at every point of the vine leaves.

Let us now contrast the effect produced by the shallow planting and the retaining of the surface roots. The lower roots in this case will still tend to go deep according to the nature of the soil, and, as long as the moist season lasts, the vine will grow with very great vigour. The upper roots will furnish the plant with a great abundance of food; but when the drought comes severely, the vines will have to depend almost solely on its lower roots which are not themselves deep enough to be within the reach of a regular supply of moisture; but are affected more or less directly by the weather; whereas the upper roots that run horizontally near the surface, and which in wet weather used to furnish the vine too great a supply, are now left in an almost perfectly dry bed of earth, and exposed to the scorching sun. The quantity of roots being thus

divided between an upper and a lower tier, the latter must, of course, be much smaller, and inefficient than must be the case when the upper tier is suppressed, and the strength of the whole, yielded to the lower. Any one must judge *à priori*, that such a state of things must be opposed to the welfare of the plant, and most particularly to that of its fruit. It must be here observed, that very great vigour of growth in the vine, and indeed all fruit-bearing-trees, is unfavourable to the abundance, perfection, and richness of the fruit. And this brings me to notice the principal cause of the rot in grapes.

The grape, like all other fruit, is beset with myriads of enemies who prey on it, and Mr. Geiger is certainly right in accusing insects of causing great havoc in vineyards, whether by their eating, or still worse, by depositing their eggs either within or on the surface of the fruit, by which a kind of rot is induced. It is not merely one kind, but numerous kinds of insects that commit these injuries. But numerous as are these enemies, there is one much more formidable that causes a destructive rot that is even beyond the capability of the insect; though they be in countless myriads; and this dread enemy is nothing else than water, when it is too abundant. The injury done by insects is partial; but that caused by the other is, under certain circumstances, the almost total destruction of the fruit. In the first place, when much rain falls during the time when the vine is in bloom, it occasions what is called in French, "*coulure*," that is, the flower is blighted by the pollen of the stamina being washed away which prevents the impregnation of the fruit. It is very difficult to find an effectual remedy for this, practicable on a large scale. The temporary covering of the vine will do much, and the ringing of a branch of it will sometimes have the desired effect by hastening the blossoming of the branch thus operated on. The rot always takes place when, after a long drought, a great glut of rain happens; and this is very frequently the case from the nature of our seasons. We have generally a long and severe drought in the beginning of summer, and this is most usually followed by very abundant rains. The vine, which has been allowed to retain its superficial roots, and has not therefore attained as much depth with its other roots as it would otherwise have done, has been, during the drought, but scantily

supplied with moisture by its roots, the upper ones being roasted by the sun and drying wind, and the lower ones not only are not deep enough, but they are also too feeble and inadequate to a full supply; and if the plant has not suffered much during that time, its luxuriance has been checked. The upper roots are very dry and thirsty, and when the rainy season comes, they furnish the vine with such an abundance of water, that the fruit is filled with too crude a juice and it rots. That this is the case is evident from the rot always appearing extensively, invariably under such circumstances, and that vines so situated as not to be exposed to take in too much water, seldom or never rots. The vines planted in paved yards in towns where the rains that descend so plentifully run off and do not sink in the earth, but in a comparatively slight degree, are seldom, if ever, affected by the rot. Such as are growing in small gardens in towns, where they are surrounded by houses and streets, by which most of the rain that falls runs off, are in proportion to these circumstances exempt from the rot. Vines planted deep and whose surface roots are yearly suppressed, do not suffer so much from the drought; for they are supplied from a depth unaffected by the drought, and in the rainy season, the water from the clouds reached their roots slowly and gradually, and the bad effects produced in other circumstances are not as much weakened. The observation of another fact tends greatly to corroborate this view of the case. When vines that are of a bearing age are transplanted, they usually bear some fruit the first year, if they have been planted with any care at all. The grapes produced under these circumstances are seldom, if ever, affected by the rot. The cause is evidently this, that though the vines are dug and planted ever so carefully, they have nevertheless lost much of the roots, particularly the small ones which are as the mouths of the plant by which the moisture is chiefly supplied to it. I say chiefly, because the leaves also furnish a considerable supply. Now the leaves also of a vine thus circumstanced are greatly less numerous than usually. The supply of moisture in these cases is very considerably diminished, and the fruit is therefore not affected by the rot.

It appears to me, Sir, that the above reasons are sufficient to defend the practice of deep planting, and that if, in this, I err, I do so in company with the best authorities on the subject, and not without having, at least, some plausible reasons to advance in my defence. That men differ in opinions and even as to matters of fact, is, I conceive, an advantage; for discussions lead to truth, and the attainment of this is certainly my sole object. It may be thought by many that this subject is uninteresting; but to such as may think so, I will ask if Mr. Geiger's last crop of six thousand five hundred gallons of wine, the product of very poor, and in other objects, unproductive lands, does not show it to be a matter of the utmost importance in every point of view, moral, political, economical and pecuniary.

If you think, Mr. Editor, that the above is worthy of a place in your valuable periodical, I beg you will insert it as early as convenient; for I have delayed it too long, and, I assure you, my zeal for this object has rather increased with my years, and I still think that the culture of the vine in these Southern States will prove a blessing to them, and that the sooner such an object is attained the better.

I am, very respectfully, Sir, your obedient servant.

N. HERBEMONT.

We, with much pleasure, have complied with Mr. Herbemont's request, for we, indeed, believe the subject to be an important one to the South, and Mr. Geiger's success will give an impetus to the culture, which will show itself in the springing up of vineyards in many parts of our State. The culture, we are happy to learn, is already spreading. The great check to this has been, and is, the rot, which sometimes destroys nearly the whole crop; if a remedy for this can ever be found, then, indeed, will the vine become a favourite. The cause, we believe, to be, as suggested by Messrs. Clark and Herbemont, the want of moisture at one time, and the superabundant supply at another, whether planting the vines deep, will prevent this, remains yet to be proved. We believe no direct experiment has been made to ascertain this, at least, we have heard of none. Should any have been, we shall be happy to receive an account of them.—*Ed. So. Agr.*

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**ART. XLVII.—*Observations on Curing Corn and feeding of Cattle; by B. NICOLAU.***

[During our excursion into Georgia we several times heard of the excellent management of Mr. Nicolau, and it would have afforded us much pleasure to have called on him. Our time did not permit and we asked the favour of Mr. Couper to request him to become a contributor to the *Agriculturist*, and the following has been politely furnished in pursuance of this request. We regret, that he should have thought that his practice so much resembled that of others, as not to require particular notice, with due deference we think otherwise. The practice of any planter who renders his old fields as profitable as his new, must be worthy of particular notice, and we still hope, Mr Nicolau will do us the favour, of communicating it in detail.—*Ed. So. Agr.*

“ Hopeton, April 17, 1833.

*Dear Sir,*—The accompanying statement has just been handed to me by Mr. Bernard Nicolau, who resides in the Buffalo, in reply to my request, that he would furnish you an account of his system of planting. He thinks his practice, except in the greater use of the plough and a greater attention to manuring, so much like that generally adopted by others as not to require any particular notice. He conceives that he has derived important advantages from pursuing the mode of cutting his corn and penning his cattle, which forms the subject of his paper. I can adduce my own experience in favour of the penning system. The subject is not new; but its successful application by a practical man and a good planter, may recommend it to an insertion in your journal. Mr. Nicolau is a French gentleman, who presents one of the best specimens of a good agriculturist that this section of the country offers: and has done much with very limited means. He has accomplished what is still more rare, in rendering by a judicious system of manuring and rotation of crops, his old lands as profitable as his new.

With great esteem and respect, I am dear Sir, your obedient servant.

**J. HAMILTON COUPER.**

**NOTES ON FODDER AND CATTLE.**

*Fodder.*—The greatest difficulty for farming in this part of Georgia is the procuring of fodder. The only source of it that I have as yet discovered, is Indian corn, and

when managed as I have learned to do, by the information obtained from "Taylor's Arator," and the third volume of the "American Farmer," it yields a great deal of it, not only for horses which are too nice to eat any part of it but the *grain* and *blades*, but for oxen and cows, which eat all the tops and shucks. For several years I have tried to save both in the *common way* with no success, and it is only since I have followed the plan laid out by the farmers of Virginia, that I have attained my object, viz. to have fodder enough to support thirty head of grown cattle for two months in the fall (September and October,) with thirty acres of corn. My manner of saving it is this.

*Shucking  
Corn?*  
When the corn is past what is called mutton corn, or when I have saved the blades up to the ear of corn, I proceed to cut the stalks. Two hands with their hoes, cut first two rows, in the middle of a half task (which are the fifth and sixth of it, if there are twenty rows in a task) these hands continue to cut it down the whole length of the field, be it more or less. Then they return in the same way in the other half of the task, until all the field is gone through—four or more hands follow these two; picking up the stalks of corn and carrying them to a place where four stacks of corn have been tied together to make a heap. In the length of one task, there are two stacks for ten rows, and four heaps are made in each task. It is not necessary to bind the whole stack round. It will stand well if made right. After a week or ten days, I move the heaps; and of two I make one, so that the inside becomes the outside, and the whole dries well and very few ears are spoiled. When I think that the corn is dry enough, I shuck it on the ground and put up the heaps again, making one out of two, so that a single heap of fodder remains in each task; such fodder will keep well the whole winter and will serve for the working oxen till May.

*Cattle.*—Keeping the cattle the whole year in pens, has been my aim since I have known the necessity of making manure. I have succeeded in that plan, in this manner: from May to August, my cattle are turned out to live on the green grass of the woods, and penned at night; and from September to April are kept in a close pen, or in my field, and always penned at night. My pen is square with one side of it covered; all the grown cattle are fastened

by their neck at three or four feet distance from each other, by two upright poles, one of which moves on a pin, and when the oxen or cows have put their heads between the two poles, the moveable one is fixed by a pin. Every night fresh litter is put under them, and they are fed from September to October with my corn tops and shucks, cured as I have said above, and besides with potatoes, vines or peas pulled up root and all; in November and December with sugar-cane tops, and then, when the cotton is done picking, they are turned into the field and fed at night with cotton-seed, at the rate of two quarts each. I have found that eight acres of corn will support thirty head of cattle for sixteen days, and one acre of cane tops will go as far as these eight acres of corn. In my pen there is a well and a large trough to water the cattle. The young calves are kept in a separate pen.

**ART. XLVIII.—***On the duration of vitality in Garden Seed; by THOMAS PARKER.*

“Rocky Grove, Abbeville District, March 19, 1833.

*Dear Sir,*—I send you a few extracts from my Note Book on Gardening, which you can use as you think proper.

*Question*—How many years old will Carolina grown seeds vegetate in Carolina?

*Answer*—Cabbage, 2 years—not one the third year—two experiments.

Civie Beans,	2 years,	do.	do.
Musk Melon,	4 years,	not one	the fifth year.
Cucumbers,	4 years,	do.	do.*
Water Melons,	4 years,	not tried	further.
Pumkins,	4 years,	do.	
Squashes,	3 years,	do.	

\* Cucumber seed five years old planted in a common garden soil—not one came up—planted in a dung hill and watered morning and evening came up perfectly well on the fifth day.

Snap Beans,	2 years, not tried further.*	
Carrots,	2 years,	do.†
Okra,	3 years,	do.
Tomatoes,	3 years,	do.
Turnip,	5 years,	do.
Radish,	3 years,	do.
Onions,	2 years,	do.
Lettuce,	3 years,	do.
Endive,	3 years,	do.
English Peas,	2 years,	do.
Water Cresses,	2 years,	do.

I have observed a difference of ten days in sprouting, between old and new seed in favour of the latter; the old seed sometimes takes fifteen days to vegetate.

Respectfully,

THOMAS PARKER.

\* In filling up the cracks of a log-house with clay in this neighbourhood, a small bag of Snap Beans was accidentally enclosed between two logs in the clay. This clay was removed 15 or 20 years after, when the bag of beans being discovered, they were planted by way of experiment, and the greater part of them vegetated.

† Three small beds of Carrots sowed by way of experiment in June. Bed No. 1. was watered in the evenings and afforded a fair crop of Carrots. Bed No. 2, watered morning and evening—scalded by the sun and destroyed. Bed No. 3, watered morning, noon and evening—these advanced in growth rapidly ahead of No. 1, and were remarkably large and fine.

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We shall esteem it a favour, if Mr. Parker, and other of our friends will occasionally send us accounts of their horticultural transactions, for certainly we need information on every branch of gardening, and this want will be best supplied from among ourselves, by those who are already somewhat conversant with these subjects. The directions given in foreign publications are not always applicable, and nearly always have to be modified; those, therefore, who have experience in the culture of vegetables, fruits or flowers, ought to communicate it for the benefit of those less informed, and who, from the want of experience, are deterred from entering on such pursuits, but who would most willingly do so if they were instructed.—*Ed. So. Agr.*

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ART. XLIX.—*Account of the May Exhibition of the Horticultural Society of Charleston; by the EDITOR.*

The general exhibition of the Horticultural Society was held at Seyle's long room, on the 23d and 24th of last month, and although the season had by no means been favourable, yet this exhibition surpassed any thing of the kind ever witnessed here, and has given an impetus to the growing taste for horticulture, which will soon exhibit itself in the more tasteful arrangement of our gardens, and the more choice collection of beautiful and rare plants which will adorn them. Although we feel our incompetency to do any thing like justice to the splendor and beauty of this exhibition, yet, we will endeavour to convey some idea of it to our readers.

On entering the room the visiter was struck with the *tout ensemble* of the whole. Immediately in front, but at some distance, he beheld a pyramid decorated from the bottom to the top with geraniums, and many other flowering or ornamental plants, whilst the space between was occupied with tables and stands filled with the choicest flowers and plants, vieing with each other in splendor and beauty. The Hall is an oblong square, the door being at the western end. On each side and near the western extremity were two tables, on which were placed the vegetables exhibited for the premiums offered by the Society: between these was a large box three or four feet square, containing a *Jasminum trinerva*, (sent by Mrs. Schreiver) trained four or five feet high, on a wooden cross, over which it formed a beautiful head, somewhat in the shape of an umbrella, several feet in diameter, and covered profusely with buds: very few of the flowers were expanded—in a week longer it would have been a most splendid sight. Passing onward, the next object which presented itself was a gigantic plant of the Prince George geranium, covered with its beautiful scarlet blossoms. On the north side, but nearer to the wall, was a large plant of the double red Oleander, whilst on the south side at an equal distance, a most beautiful plant of the purple Banana waved its large and graceful leaves. Passing still onward, you beheld a large circular table, profusely decorat-

ed with bouquets of flowers, whilst in the centre elevated on a small circular stand, was placed a jar containing a large plant of the double white Oleander in bloom. Immediately in front rose a large octagan pyramid, covered from the top to the base with beautiful flowering or ornamental plants, in jars, among which the geraniums were conspicuous, with their numerous showy flowers. On each side of the pyramid, were large plants in boxes. To the east of the pyramid were two flower stands, on which were placed large vases of beautiful flowers furnished by Mrs. Bentham, to the right and left of these, were two small square pyramids containing four ranges of stages, on which were placed small plants in pots, and cut flowers in vases formed into bouquets. Still further to the eastward, in the centre, was another large circular table, with a smaller one elevated in the centre. On these the single (cut) flowers, which were remarkable either for their rarity or beauty were placed, whilst several very handsome vases of flowers were placed on the smaller elevation. To the north and south of this table, extended two long tables with two ranges of stages on each side surmounted with one in the centre—these also were filled with plants in pots and bouquets of flowers. Two stands surmounted with large vases of cut flowers, were placed at the extreme east end of the room, and terminated the whole.

In the preceding we have endeavoured to give some idea of the arrangement, but to describe the appearance of the hall when decorated with plants and flowers, and filled with company, would require an abler pen than ours. We cannot, however, quit the subject without alluding again to some of the plants. Among those sent to the exhibition was an American Aloe, just on the eve of blossoming. It had shot up its flower stem about fifteen feet high and showed the unexpanded blossoms on many branches; a week or two longer and it would have been in full bloom.\* This plant was sent from the garden of Mr. James Nicholson. It was impossible to get it in the room, owing to the winding passage, and was therefore left in the yard. This was less to be regretted, as it enabled the visitors to view it not only from the spot

\* Notwithstanding this plant was cut off near to the ground to bring it to the exhibition, yet it has continued to grow as if it had not been removed, and is now [June 18] covered with blossoms.

where it rested, but as its stem rose near the windows of the hall, to see distinctly the whole arrangement of the flowers.

The purple Banana, exhibited by Mr. John Michel, was remarkable not only on account of its rarity, but also for its beauty. The variety usually seen here is the yellow, and we understand the purple is rarely to be found even in the West-Indies. It has been only after much research, that Mr. Michel obtained it, and he certainly produced a very fine healthy plant, six or seven feet high, at the base of which were two young suckers, just appearing. This is the only plant in this city, and, we believe, the only one in the State—perhaps in the United States. Mr. Michel also produced the Sweet Guava, of a large size, and with both flowers and fruit on it.

Although the season for Roses had passed, yet nine varieties of China Roses, and seven varieties of Sweet Roses were sent from the garden of Miss Stone. A number of very beautiful flowers were also sent from her garden, among which was the Chinese Hybiscus. The bouquets were uncommonly handsome, especially those sent by Mrs. William Johnson, Mrs. Cochran, Mrs. Wagner, Mrs. Patton, and Mrs. Bentham. Very elegant bouquets were also received from Mrs. Eason, Mrs. Davis, Miss Webb, Miss Mathews, and Miss Merchant.

Mrs. Hoff and Mrs. Schreiver contributed largely, especially in geraniums. Mrs. William Drayton, sent a large and beautiful Carnation Plant in full bloom, which was much admired, and for which a premium was awarded. There were but few Dahlias sent, but few being in bloom at the period: the handsomest were from the garden of Mr. James Nicholson. The Society did not award a premium for these, having determined to hold an exhibition for Dahlias and other flowers in September.

The vegetables exhibited were much fewer than we could have wished, in fact, there was but little competition at the hall; but, by a regulation of the Society, the whole market is considered as in competition: that is, if any vegetable has appeared in market any time during the season, finer than that exhibited, no premium is awarded, although it may surpass all those exhibited, this prevents any premium being bestowed unworthily. The vegetables, however, exhibited at this time, although

few, were really remarkably fine, and we do not recollect ever to have seen better, with one or two exceptions. The fact is, we are already witnessing the good effects of this Society in the superior size and better condition of the vegetables, and in a few years this will be made manifest to the most superficial observer.

On the whole, we have every reason to be gratified. Our Society has increased in numbers, and what is better still, the taste for horticultural pursuits is rapidly spreading throughout our city, which is shown by the eagerness with which plants are sought after by all, whether young or old, ladies or gentlemen, and by the desire, which all, who have even a small spot of ground evince to have it decorated with flowers and ornamental plants, while the more substantial part of the garden is frequently boasted of and shewn with pride as possessing vegetables which would not disgrace the table of any one. This was not the case a few years ago, and from the improvement which has already taken place, we augur the happiest results. It will yet be some time, before we can vie with our northern brethren in exotic plants, especially in those which are rare and costly, but we doubt not the time will come when our exhibitions will bear a comparison with their best. And why should it not. We have both the wealth, and the climate, and all that is wanting is a taste for such pursuits, which is now just springing up, but which promises to produce an abundance of fruit. We subjoin the report of the Standing Committee, submitted to the Society at their last exhibition.

“An exhibiton of Flowers, Fruits and Vegetables, took place at Mr. Syle's on the 23d and 24th of May. The arrangements were judicious, and the general appearance of the room calculated to increase our pride and pleasure at the opportunity thus afforded, of gratifying the community, in an amusement so innocent and delightful. The exhibition brought to our view, a great number as well as variety of Flowers, and we therefore congratulate ourselves not only in the increased extension of Flora's reign, but in the increased skill, taste and judgment exhibited in their cultivation. Affording health and agreeable recreation, as such pursuits will do—we cannot but anticipate the period when every family will present a parterre of its own, each village and rural retreat, be enlivened by the introduction of these most agreeable and pleasing inmates. The



Flowers of our woods, will be found to repay by their beauty and fragrance, are and as worthy of living in the poet's song as the Cowslip and Eglantine—our vacant lots, our cottages and farms adorned by their presence, and the traveller made to rejoice by those emblems of peace, innocence and beauty.

The exhibition of Vegetables was also good, though we regret not having a greater number of competitors. Such vegetables as were presented, were fine, and good evidence of what could be done, were the necessary attention bestowed.

Of Fruits—the season of the year does not afford much variety in our climate, but we were pleased with the size of the Strawberries and Plums presented.

The following selection has been made, as most worthy of the premiums the Society has offered, for the several varieties of Flowers, Fruits and Vegetables.

For the most beautiful flowering exotic plant—to Mr. F. Dupont, *Renealmia Nutans*—Silver Medal.

For the most beautiful flowering indigenous cultivated plant—to Mr. J. F. O'Hear, for *Hydrangia Quercifolia*—Silver Medal.

For the most beautiful Flower from an exotic bulb—to Mrs. Wagner, for *Agapanthus Umbellatus*, 'Turk's Cap'—Silver Medal.

For the most beautiful Carnation—Mrs. William Drayton—Silver Medal.

For the most beautiful *Pink*—Mrs. Schreiver—Silver Medal.

*Contributors*—The Society feel particularly indebted to Mrs. Cochran, Mrs. Wagner, Mrs. William Johnson, Mrs. Joseph Johnson, Mrs. E. Rutledge, Mrs. William Drayton, Mrs. Benthall, Mrs. Davis, Mrs. Hoff, Mrs. Patton, Mrs. Eason, Mrs. Schreiver, and to Misses Stone, Mathews, Webb, Crafts and Merchant, for the specimens sent.

So numerous were the contributors, that it would be impossible, in the brief notice we are compelled to take of this exhibition, to award the due merit to each; yet we cannot pass by entirely some which were more conspicuous than the rest.

The American *Aloe*, from the garden of Mr. James Nicholson, was much admired, although not fully in bloom. The *Dahlias*, sent from the same garden, attracted much attention by their great beauty.

The *Purple Banana*, sent by Mr. J. Michel, attracted general attention. It was a most beautiful plant, about seven feet high, and remarkable not only for its rarity, but also for its beauty. It has been obtained and reared to its present state at considerable expense both of time and money, and we hope that Mr. Michel will be rewarded by complete success. To this gentleman the Society were also indebted for the exhibition of a large plant of the *Sweet Guava*, with flowers and fruit. He also exhibited some beautiful specimens of the *Moss Rose*.

The bouquets of flowers were handsome and tastefully arranged, and it would be impossible to discriminate in favour of any, without doing injustice to the rest.

*Fruits.*—The premium for the finest *Strawberries* was awarded to Mr. J. Michel.

For the introduction of a new fruit, to Mr. John Michel, for the *Purple Banana*.

*Vegetables.*—Twelve best roots of *Parsnips*, Mr. J. A. Winthrop; twelve best roots of *Salsafy*, Mr. E. W. Bounetheau; twelve best *Kohl Rabi*, Dr. H. R. Frost; twenty-five best *Leeks*, Mr. E. W. Bounetheau; twenty-five best *Onions*, Mr. J. Mathews; best bushel *Irish Potatoes*, Mr. J. F. O'Hear; twelve best *Artichokes*, Mr. J. A. Winthrop; twelve best *Tart Rhubarb*, Mr. J. D. Legare.

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ART. L.—*Account of an Agricultural Excursion made into the South of Georgia in the winter of 1832; by the EDITOR.*

(Continued from page 304.)

We remained several days at "*Hopeton*," enjoying the hospitality of J. Hamilton Couper, Esq. during which time we were busily employed in viewing the plantation, and taking notes of such things as we saw or heard of. To Mr. Couper, we feel peculiarly indebted for the many facilities he afforded us for viewing his establishment and its various operations. He not only politely attended us in our excursion over the various fields, pointing out such things as were most worthy of notice, and giving such information as was necessary; but he also submitted to our inspection the various books kept on the place, and thus exhibited to us the minutest details of the operations of the plantation. But even with all these facilities, we should not have been able to have given as ample and as satisfactory an account of "*Hopeton*," as we wished, and as it justly merits, had he not kindly assisted us still further by furnishing us with notes in reply to several queries propounded to him. To these we shall frequently refer

in our account of this place, and quote largely from them, as being more full and more satisfactory than any thing we can pen : we shall only add such other matters as are not embraced in them, or which our notes enables us to give something in addition.

We need scarcely say, that our time passed most pleasantly, and much did we regret that our time would not permit us to remain longer, for although we gathered much information during the time we remained, yet we are conscious that twice that period might have been spent both pleasantly and profitably. It requires many days to examine and understand the management of any large establishment, especially such a one as "*Hopeton*," where not only all of the valuable crops of the south are cultivated in rotation, but where they are also prepared for market on the place, and where every arrangement exhibits both science and skill, and the management of one well versed not only in the science but practice of agriculture. We hesitate not to say "*Hopeton*" is decidedly the best regulated plantation we ever visited, and we doubt whether it can be equally (certainly not surpassed) in the Southern States, and perhaps, when we consider the extent of the operations, the variety of crops cultivated, and the number of operatives who have to be directed and managed, so that their work may be made productive, it will not be presumptuous to say, that it may fairly challenge comparison with any establishment in the United States; whether we consider the systematic arrangement of the whole, the regularity and precision with which each and all of the operations are conducted, or the perfect and daily accountability established in every department. We hope we may be able to give such an account of this place as will convey a correct idea of its management, and we trust that our readers will not tire, should we enter more into detail than is usual with us: we may be tedious and uninteresting, but it will not be from want of interesting matter, but our inability to give it a pleasing form. We feel more desirous of entering into minute details of this place, because it highly deserves to be held up as a pattern for our southern planters. In a few years other plantations may equal, perhaps surpass what "*Hopeton*" now is, but Mr. Couper is yet a young man, well versed in all the sciences requisite for a southern planter, and now in the

full tide of successful operations. If he has already accomplished so much, what may we not yet expect, when further experience shall have added to his already extensive stock of information, pointing out his errors and opening new vistas to his sight. We may remark here, *en-passant*, that every statement we shall give may be implicitly relied on, for, with Mr. Couper, there is no guess work, every transaction is regularly entered in some one of the books kept on the plantation,\* and on being questioned as to any fact or experiment, he can at once turn to the record of it, if he has ever had any experience on the subject. His fields are also laid out with the utmost accuracy, so that the exact quantity in each is distinctly known, and consequently the exact product ascertained, if any thing like care is taken in the measurment when gathered, and as daily returns are made of every operation, there is not the possibility of any error occurring which would not be almost immediately detected.

"Hopeton" is situated on the south side of the southern branch of the Alatomaha river, about five miles by the course of the river from Darien, and fourteen from the sea. The swamp land is connected with the high land of the main, which is pine barren, and valuable only for an abundant supply of excellent timber for building, and fuel for the furnaces of the steam-engine and sugar kettles. The several tracts of land composing the plantation contains 1446 acres of swamp and 2388 acres of pine-land. Of the swamp 135 are river knoll, 50 bay land, and the remaining 1261 acres are tide swamp, which 936 acres of swamp, and 30 of pine-land has been cleared and are under cultivation. Of the 936 acres of cleared swamp, 736 $\frac{3}{4}$  acres are enclosed by one outside bank. This bank is 3 $\frac{4}{5}$  miles in length, has a base of 20 feet, a top of 5 feet, and a height of 5 $\frac{1}{2}$  feet. It is coated throughout its whole length with Bermuda grass, (*Cynodon Dactylon*) known among us as the *joint* grass.† Of these 736 $\frac{3}{4}$  acres enclos-

\* To these books we shall again refer.

† This grass is strongly recommended by Mr. Couper for the coating of all rice-field banks, as it is a sure protection against any breakage by freshets—instances having occurred where the water has poured over banks thus protected, for days without doing the least damage, whilst those spots not thus protected were swept entirely away. A striking instance of the efficacy of this grass in protecting the banks was mentioned to us. The whole of one of



ed within this bank  $679\frac{1}{2}$  acres are arable.  $31\frac{1}{4}$  acres are occupied in ditches, and 26 acres in bank. Of the arable lands  $637\frac{1}{4}$  acres are in fields,  $18\frac{3}{4}$  in margins, and  $23\frac{1}{2}$  acres in roads. The remainder of the cultivated land having been recently cleared is under smaller banks.

As this place is on account of its situation exposed to injury from freshets, which sometimes are very destructive on this river. Mr. Couper has with great judgment divided his fields into five divisions, each of which is protected by banks of sufficient strength to resist ordinary inundations. The advantage of this arrangement is at once obvious. Should the banks of any single division give way, that division alone would suffer, the banks of the other four being amply strong enough to protect them; but should any of them prove unequal to the force of water pressing on them, yet only those divisions would suffer. Thus, then, instead of relying on one large external bank for the safety of the crops, he has five on which dependance can be placed, besides the usual check banks, and it rarely will occur that more than one of these divisions will suffer, unless the freshet be indeed overpowering. At any rate, the risk is diminished, and the probability is, that only one division or one-fifth would suffer.

the division banks was thus coated, except where a footpath crossed. During a freshet the water swept over this bank for some time with considerable violence. When it had subsided, the bank was found entire and without the least injury, except where this footpath had crossed, and here it had the appearance of a small ditch having been cut by a spade—that part alone which was unprotected by the grass being washed away. From all that we saw and heard, both from Mr. Couper and others, we cannot too strongly recommend it to our planters, for coating their *river* banks at least, especially where they are subject to damage from freshets. Care must, however, be taken to permit it to get a foothold on the high land, for of all grasses, it is the most difficult to eradicate, with the exception of the nut grass, which, we believe, is not to be conquered even by the Frenchman's patent.\* But whilst confined to the river banks, it is completely kept in check by the water, by which it is easily killed. We saw banks, on which it had been for fourteen years without its having spread beyond the base, and this one, of the cross banks running through the very midst of the fields. On Butler's Island, it has been for upwards of twenty years, and is still confined to the banks, in fact, so completely is it under control, that not the least fear is entertained of its ever encroaching on the cultivated land, and as a protection to the banks, it is thought invaluable.

\* A Frenchman took out a patent a few years ago to destroy this grass by scalding it to death. We refer the curious to the specification of his patent, in the Journal of the Franklin Institute should they be disposed to enter the list with it.

It was a beautiful clear and mild day in December when we first arrived at "*Hopeton*." The river landing is near to the termination of a large canal, along the banks of which a footpath runs, leading up to the settlement. On emerging from a few shrubs on the margin of the river, the whole of the Hopeton establishment burst on the view, and was truly a beautiful sight. The large white mansion, situated on an eminence rising somewhat abruptly from the fields, and partly concealed by shrubbery, the steam-mill and sugar establishment with the lofty chimney, from the top of which arose and gently curled the light blue smoke; the various offices neatly whitewashed, and which showed to advantage as half seen, half hid by shrubbery, they appeared and disappeared, as you advanced along the bank, formed a sight truly pleasing. The distance from the landing to the sugar-house is a mile and a quarter, and a large and deep canal, with lock-gates at the river runs in a direct line from thence to the sugar-mill, from whence it proceeds to within a short distance of the house, passes along the margin of the high grounds, again through the fields, and finally empties into the river a short distance from where it commenced. This canal is three miles in length, fifteen feet wide at the surface, ten at the bottom, and four and a half deep, and is very important in draining the fields, admitting water for cleansing the plantation, carrying up the cane crop to the mill, the produce to the river, and bringing up supplies. We shall have occasion again to notice this canal, and the various uses to which it is applied. Proceeding along this bank, in due course of time, we arrived at the sugar establishment, where we had the pleasure of meeting Mr. Couper and witnessing the mill and boilers in full operation. We were not detained here, long, at this time, but conducted to the mansion and introduced to his charming family. In the afternoon we again visited the sugar-house, and examined the various operations from the landing of the cane from the flats on the canal, at the foot of the inclined plane to the draining of the sugar in the curing-house. We several times visited the establishment, and shall in the proper place give a more ample account of what we saw and noted. Whilst here, we visited the nursery and hospital, the negro quarters, the cotton-house, and the other offices, together with a number of the fields. All the crops

had been harvested except the cane, and we had the pleasure of seeing all the operations connected with this valuable crop, from the commencement of the stripping the cane to the final preparation for market. But we will proceed more systematically to work, and give an account of all we saw in their proper places. We will commence with the arrangement of the fields, and the crops cultivated, and we will here quote largely from Mr. Couper's notes.

"The average size of the fields is about fifty acres. They were originally laid off for cotton culture; and the divisions were made principally with reference to facility of drainage and the quality of the soil. As the size of the gang of negroes admits of these fields being worked in one day, they have not been reduced since adopting the rice culture. The usual form is rectangular, with an average width of 1100 feet from bank to bank, and a length of from 2200 feet to 3300 feet. The fields are surrounded by leading ditches, the average dimensions of which are 4 feet deep, 8 feet at the surface, and 4 feet at the bottom. At right angles to the leading ditches are smaller ones, about 2 feet wide and 2 feet deep,  $52\frac{1}{2}$  feet apart. In most of the fields these small ditches are intersected by roads 21 feet wide, with side ditches 3 feet wide and 3 feet deep. These roads are generally about 275 feet apart from centre to centre. Each field is therefore divided into four sections, having an average width of 250 feet, and a length equal to that of the whole field. When the fields are in a dry culture crop, a deep water furrow is opened by the plough, parallel to the roads at intervals of  $52\frac{1}{2}$  feet. The land is thus checked off into small squares of  $52\frac{1}{2}$  feet, or 16 to an acre.

"The original object of making the roads was to facilitate the harvesting of the cane crop. Independently of this they are very useful in draining and for the carting of manure. As they are planted and produced good crops of every kind, the space occupied by them is not lost.

"To all of the fields, trunks are placed at the points most advantageous for draining: and one square foot orifice, or water way, is allowed for 3 acres of land.

The following is a diagram of a field:—

[illegible]



'A. banks. B. leading ditches, 8 feet, by 4 by 4.

'C. cross ditches, 2 feet by 2 feet.

'D. roads, 21 feet wide with side ditches, 3 by 3 feet.

'E. water furrows, opened by the plough 6 inches below the surface of the ground.

"Those fields which are more than half a mile from the river, drain into a canal, passing through the centre of the plantation. This canal is three miles in length, 15 feet wide at the surface, 10 feet at the bottom, and  $4\frac{1}{2}$  feet deep: the extremities of it terminate at the river. At one of them is a lock-gate 75 feet long, 12 feet wide, with 4 pair of gates, calculated to pass flats 45 feet long, and 11 feet wide at any stage of the tide; except the last  $\frac{1}{4}$  of the ebb and first  $\frac{1}{4}$  of the flood; at the other is a flood-gate 35 feet long, 11 feet wide, with two pair of gates. This arrangement, by allowing the water to enter at one end of the canal and to be discharged at the other, prevents it from stagnating. This canal cost about 10,000 days labour. It serves the purposes of draining and flowing the interior fields—and of harvesting the crops and transporting produce and plantation supplies to and from the river, which is  $1\frac{1}{4}$  miles distant from the settlement. It is particularly useful in harvesting the cane crop, as it admits of the use of flats carrying from 12 to 15 tons: two of which are connected together and drawn by a yoke of oxen, attached to a tow-rope.

"*Crops Cultivated.*—On the *pine-land*, sweet and Irish potatoes, cow-peas, turnips and rye. This soil is regularly manured from the cattle pens, and is devoted to secondary crops.

"On the *swamp lands*. Rice, cane, cotton, and occasionally corn. The three first named crops are made to alternate with each other as far as the disturbing causes of new clearings, unexpected extension of a new culture, contraction of an old one, and the peculiarities of soil and situation have permitted. In order to apply to practice the important principles of a rotation of crops, the general system is to alternate a rice crop with one of cotton or cane. The leading objects are to make a plant requiring a dry culture succeed one benefited by water: and to interpose the cotton having a system of broad leaves and a long tap-root, between the cane and rice, which are, both fibrous rooted and narrow leaved. The best rotation of these three crops has been found to be,

'first year, *rice*, second, *cotton*, third, *cane*. If the land is  
'fresh and strong, then, first year, *rice*, second, *cotton*,  
'third, *cane*, fourth, *cane*. If worn, the cane should be  
'limited to one year.

"If the land is kept longer than one year in rice, par-  
'ticularly if flowed during the winter, the subsequent dry  
'crop, has with me, been of inferior quality. The wet  
'culture, if two long continued, leaves a sourness in the  
'land which is unfavourable to cotton, but more so to  
'cane. To avoid this effect, the land should be but one  
'year in rice, and kept dry and deeply turned up during  
'the winter months.

"Cotton is placed after rice in preference to cane, be-  
'cause its habits are more dissimilar: and because, being  
'cultivated on higher ridges, the land is sooner deprived  
'of the sourness and coldness left by the water culture.  
'Moreover from the frequent hoeings given to the cotton  
'plant, together with the action of its tap-root, the soil is  
'best pulverized and adapted to receive the cane. A fur-  
'ther reason is, that the cane being the more valuable  
'crop, it is placed under the most favourable circum-  
'stances.

"On the knoll lands, cotton and cane only are made to  
'alternate. This rotation is a trying one; and, to prevent  
'the exhaustion of the soil, manure must be resorted to.  
'The leaves of the cane listed in during the winter, form  
'a valuable and large source of manure. The supply  
'most relied on, however, is derived from the expressed  
'canees, placed from  $1\frac{1}{2}$  to 3 feet deep in the cattle pens:  
'and from rice-straw, either listed in under the cotton beds,  
'or placed in sheep, hog, and cattle pens and then used.

"The result of a system of rotation of rice, cotton and cane  
'is highly favourable to the increased production of each crop.  
'It is particularly so to the rice crop, which rarely falls short  
'of 70 bushels to the acre after either cotton or cane.  
'The cane crop is generally fine after cotton: and cotton  
'after cane, if the cane trash is listed in. The advantage  
'is not so manifest in a cotton crop following one of rice,  
'particularly, as above noticed, if the land has been in  
'rice, several years immediately preceding. By the adop-  
'tion of the alternate wet and dry culture, the extirpation  
'of the weeds and grasses peculiar to each is greatly faci-  
'litated; and hence, a great saving of labour is effected.

‘A further and important advantage results from the alternate culture, in the order of succession in which the labour is applied to the different crops, particularly the rice and cane. The planting of the three crops follows most conveniently, as the cane should be placed in the ground before the 1st of March; the rice between the 1st and the end of March; and the cotton from the 25th of March to the 10th of April. The harvesting of rice and cane does not at all interfere, as that of the former is completed some time before that of the latter is commenced. The cotton-picking interferes somewhat with the harvesting of both rice and cane; but when the proportion of the cotton crop does not exceed one-fourth to one-sixth of the others, by a judicious arrangement of work, and the employment of the weaker hands in picking, no very serious inconvenience is felt. The time which intervenes between the laying by of the crops and the harvest, affords leisure for cutting wood, cleaning canals, ditches, &c. The manufacture of the three crops follows in convenient succession. From the 1st of November to the 15th of December, is devoted to the manufacture of the cane crop. From the latter period, the weak hands are occupied in assorting and moting cotton, while the stronger hands are engaged in ditching, ploughing, listing and planting cane. As the cotton crop is ginned by Eave’s gins, propelled by animal power; and the rice threshed out by a threshing machine driven by a steam engine, a very small proportion of the gang of negroes is diverted from field operations for the preparation of these crops for market.

“It is unnecessary to remark on the advantage resulting from the alternate culture in maintaining the fertility of the soil, and in drawing from it the greatest amount of vegetable production.

“We yet want 100 acres of the full compliment of land for the gang: when the clearings which have been commenced are finished, we shall have in cultivation 1000 acres of land; and as a part of it will for some years be unfit for cotton and cane, for sometime to come the rotation in those fields will be deranged. The proportion of the various crops will be about 500 acres in rice, 170 in cotton, and 330 in cane.”

(To be continued.)

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## PART II.

### SELECTIONS.

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#### ART. XLVII.—*Neat Cattle.*

[FROM THE LIBRARY OF AGRICULTURAL AND HORTICULTURAL KNOWLEDGE.]

(Continued from page 315.)

*The Calf.*—The calf when first dropped is generally cleansed by the tongue of its dam from the slimy matter which always adheres to the skin of the animal. Sometimes it happens that the cow will not at first recognize her offspring, but upon a small quantity of salt being strewn over it, to which all neat cattle are particularly partial, she commences the motherly duties by licking the skin. The first milk or breasting appears to be calculated to nourish the calf, which should be allowed to suck plentifully before the cow is milked. It is the practice with some, as soon as the calf has sucked as much as it pleases, to milk the remainder so as to cleanly drain the udder, and give it to the cow as nourishment.

The treatment of calves in rearing, varies very materially in different counties, and even in districts. In Sussex the calf is by many not allowed to take all the milk of the cow, but is shut up from her in the morning and evening, and a small quantity of bran or ground oats griven in a trough, and not suffered to suck till the maid comes to milking, when she milks two teats while the calf sucks the other two; after which, when the girl has got all the milk she can, the calf is left with the cow a short time, to draw the udder as clean as possible, and if there be any carrols occasioned by the pores being stopped, through which the milk flows to the speens or teats, the calf beating or striking with his nose, will break them better than by any other means. Cows are frequently injured in their milk by not having their udders thoroughly cleansed after calving, and for the first fortnight or three weeks after. When the calf is about a month old, it is suffered to run with the cow in the day, and kept from her in the night till the girl comes to milking in the morning, when she again robs the calf of part of the cow's milk; this practice by



some is followed till the calf is weaned. Some let the calves go with the cows when three or four weeks old, at which time the cow has not a greater supply than sufficient for the calf alone, after which it is allowed to run with the cow till about twelve weeks, when it is weaned, and put in a confined place out of sight and hearing, to prevent the cow being made uneasy from hearing her calf. The calf is then fed on cut grass, clover, or other green food, with hay or bran, till such time as it forgets its dam. It should then be turned out upon good pasture, for unless the calf be well fed at an early age it will become stunted in its growth, and when arrived at maturity will not fatten so readily as if proper attention had been paid to it whilst young.

In many dairy districts, it has been found desirable to rob the calf of the greater portion of milk; which has been accomplished by its being taught to drink skimmed milk in a lukewarm state, by the following means:—When the animal has fasted two or three hours, the first and second finger of the right hand are presented to its mouth, of these it readily takes hold, sucking very eagerly; in the mean time, a vessel of lukewarm milk is placed and supported by the left hand under the calf's mouth, and while it is sucking, the right hand is gradually sunk a little way into the milk, so that it may draw in a sufficient quantity without stopping the nostrils. Should, however, either from accident or from too sudden precipitation of the hand into the milk, the calf let go its hold, the attempt must be repeatedly renewed till crowned with success. About twelve weeks after which, for three or four weeks, they are fed with lukewarm milk and water. A small quantity of hay, ground oats or bran, and sometime oil cake, is then placed within their reach, which induces them to eat. Towards the end of May they are turned out to grass, being taken in for a few nights, when they have tepid milk and water given them, which is usually continued, though gradually, in smaller proportions during the last month, till they are able to feed themselves, when they totally disregard it. It is then advisable to turn them into pastures where the grass is short and sweet.

Many attempts have been made to rear calves by artificial means, which by some is said to have answered very well, where the animal has been confined and shut up in the dark; which appears to us, from practice, to be injurious, and especially if the calves are intended for stock. We certainly have no practice which can answer so well as that where the laws of nature are strictly attended to, and the calf is supplied with nourishment such as nature dictates.

The greatest attention in fattening calves should be paid to cleanliness, without which neither will the calf fatten quickly, nor when fat be of a good colour; much risk will also follow in

losing the calf from fever, which produces scouring. Chalk should be always before them to lick, which will counteract the acidity which is found in great abundance in the stomach of the calf when feeding on milk.

It is advisable in fattening calves to keep them quiet, and to allow them to suck the cow night and morning, taking the last of the milk, which is considered to be the most rich and nourishing. By this treatment the calf will gradually become sufficiently fat in eight or ten weeks, and when so, it is no advantage to keep it a day longer, as small veal, if fat, is preferable to large.

It is by some a practice to bleed calves weekly, after they are four or five weeks old, and always a short time before they are killed, by which course the veal is rendered whiter.

As castrating calves is an operation which ought not to be performed but by skilful practitioners, we shall refrain from giving any directions, recommending, the operation to be performed at the age of eight or ten weeks, as at that age the danger is considerably lessened. The animals should be kept quiet and warm after the operation, and if on the following day the scrotum should be much swollen and inflamed, the wound may be opened, and the coagulated blood removed.

*Ox.* —The ox is an animal of great utility for various purposes of draught. The most valuable breeds for working are the Devonshire, Sussex, Herefordshire, Somersetshire, South Wales, and Glamorgan; but the Devon oxen are invariably the best workers. Steers are generally broken into work at three years old. Though few breeders work them at two years and a half old, it is still a system that cannot be recommended, as their work is of no proportional value to the injury they sustain in their growth at that early season. The oxen are worked principally in double yoke, until they arrive at six years old, when they attain nearly their full growth; if kept well, some farmers continue to work them till seven years old, when, unless worked poor they will have completed their full growth; and though they will fatten equally fast at that age, they will not pay any thing to the grazier by their growth. Many of the Sussex breeders fatten off their own oxen; others are sold to the arable farmers for work at three and four years old, and by them sold at the before mentioned ages, to be grazed by those who occupy rich pastures. In selecting these oxen for feeding, great attention should be paid to their handling soft and mellow under the skin, which should not be thick, and the hair rather long and soft. The colour is but of little consequence farther than as it denotes the distinct breeds of cattle.

An ox for labour should be kept in good working condition, his body should be full, short jointed, and well put together in every respect.

The ox is naturally slow in its movements, consequently it would be very injurious to drive him beyond his regular pace. Steers when first yoked should be treated gently, and worked very light for two or three hours in a day with steady oxen, so as to inure them to labour by degrees; by this method they will, in the course of a few weeks, be in a fit state to be taken into regular work. Those oxen that work together, should be of equal strength and height, for if they are unequally matched, the weaker animal will be urged beyond his strength or natural powers, and receive great injury. If one has a slight advantage over the other, the chain from the yoke may be shifted so as to give the advantage to the weakest.

It is advisable at all times to be very careful not to over-work or over-heat the cattle in warm weather, as by so doing, the constitution will be materially affected.

Mr. Ellman has recommended the following system, as a succession for breeding and working cattle; the greater or lesser number depending on the means or inclination of the breeder. Save or rear for stock, fourteen calves each year; to do this, and to provide against accidents, and other casualties, there must not be less than twenty cows and heifers for breeding. Two or three of the worst calves may then be suckled and fattened for the butcher.

14 Calves, of which nine male; eight for oxen, and one allowed for accident, or not taken to work.

14 One year old.

14 Two years old; of which eight worked a little at two years and a half.

14 Three years old; part of which taken for cows, and others, if not good, fattened.

14 Four years old; eight worked.

14 Five years old; ditto.

8 Six years old; fattened.

Thus twenty-four oxen are worked in common; eight three; eight four; and eight five years old; and a reserve is kept for breeding cows, and accidents.

The Earl of Egremont has pursued the following system to a very great extent:—The calves being dropped from December to the end of February, are weaned immediately, never letting them suck at all, the milk being given them for a few days as it comes from the cow. But for weaning on skim milk, they ought to fall in or about December, either a month before or after at the latest, and should then be kept warm by housing, by which means they will be equally forward with calves dropped in the spring, that run with the cows. With skim milk some oatmeal is given, but not till the calves are two months old, and then only because the number of calves is too great for the quantity of milk, therefore water and oatmeal are mixed with it to make

it go further. But to this, heifers with their first calves are exceptions, for they do not become good milkers, if their calves are not allowed to suck for the whole season; with the second calf they are treated like the rest. In May the calves are turned to grass, and in the first winter, from the beginning of November, they are fed upon uplands, rouens, or aftermath. The following summer they are at grass, and the succeeding winter on straw, with a turn on short rough grass; they have been tried on hay alone, but straw and grass do better. The same course is then pursued until three years old, when they are broken in at Christmas, and are only lightly worked until the spring, when their full portion of labour begins. Their winter food is straw, with a ton and a half of clover hay, from the beginning of January. They are previously kept on straw alone, yet are worked three days in each week.

It is a question, whether it is most advantageous to work oxen by the collar or harness single, or in yoke or bows double; we are of opinion that an ox cannot be too slightly encumbered in his labour, in which case a yoke is best, and being yoked double is a great advantage on all light lands, besides, working in pairs, they are nearer to the draft, consequently possess greater power over it than when drawn in length. But those who hold the collar in favour say, there is a decided advantage in single ox-carts, and by ploughing in length they walk in the furrow, consequently do not pouch the land so much as when worked in pairs; they are of opinion likewise, that they can walk faster in harness when single, and work much easier. Many trials have been made on this subject, but we shall only notice two which took place some years ago in Sussex.

In order to decide the respective merits of the two methods, it was agreed that an acre of land should be ploughed by two teams, the one of six oxen in double yokes, the other of four oxen in collars; and then again with four oxen in single yokes, against four in collars. In the first trial, the six in yoke beat the four in collar easily; and in the second, there were only three minutes difference. The work was equally well performed, but the ploughing must have been very light, as the last match was completed in four hours and ten minutes.

The Earl of Egremont has worked his cattle each way, in both road and field labour, and his Lordship confirms the opinion in favour of the old Sussex yoke.

*(To be continued.)*

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ART. XLVIII.---*The Vices, and Disagreeable or Dangerous Habits of the Horse.*

[FROM THE LIBRARY OF USEFUL KNOWLEDGE.]

The horse has many excellent qualities, but he has likewise defects, and these occasionally amounting to vices. Some of them may be attributed to natural temper; for the human being scarcely discovers more peculiarities of habit and disposition, than does the horse. The majority of them, however, as perhaps in the human being, are consequences of a faulty education. Their early instructor has been both ignorant and brutal, and they have become obstinate and vicious.

*Restifness.*---At the head of the vices of the horse we place restifness, the most annoying, and the most dangerous of all. It is the produce of bad temper and worse education; and, like all other habits founded on nature and stamped by education, it is inveterate. Whether it appears in the form of kicking, or rearing, or plunging, or bolting, or in any way that threatens danger to the rider or the horse, it rarely admits of cure. A determined rider may, to a certain degree, subjugate the animal; or the horse may have his favourites, or form his attachments, and with some particular person he may be comparatively or perfectly manageable; but others cannot long depend upon him, and even his master is not always sure of him. We will speak of the most likely means of cure, or escaping from danger, as it regards the principal forms under which restifness displays itself; but we must premise as a rule that admits of a very few exceptions that he neither displays his wisdom, nor consults his safety, who attempts to conquer a restiff horse.

An excellent veterinary surgeon, and a man of great experience in horses, Mr. Castley, truly says, in 'The Veterinarian,' 'From whatever cause the vicious habits of horses may originate, whether from some mismanagement, or from natural badness of temper, or from what is called in Yorkshire a *mistetch*, whenever these animals acquire one of them, and it becomes in some degree confirmed, they very seldom, if ever, altogether forget it. In reference to driving, it is so true, that it may be taken as a kind of ophorism, that if a horse kicks once in harness, no matter from what cause, he will be liable to kick ever afterwards. A good coachman may drive him, it is true---and may make him go, but he cannot make him forget his vice; and so it is in riding. You may conquer a restiff horse; you may make him ride quiet for months, nay, almost for years together, but I affirm, that under other circumstances, and at some other future opportunity, he will be sure to return to his old tricks again.'

Mr. Castley gives two singular and conclusive instances of the truth of this doctrine. 'When a very young man,' says he, 'I

remember purchasing a horse at a fair in the north of England, that was offered very cheap on account of his being unmanageable. It was said that nobody could ride him. We found that the animal objected to have anything placed upon his back, and that, when made to move forward with nothing more than a saddle on, he instantly threw himself down on his side with great violence, and would then endeavour to roll upon his back.

‘There was at that time in Yorkshire, a famous colt-breaker, known by the name of Jumper,\* who was almost as celebrated in that country for taming vicious horses into submission, as the famed Whisperer was in Ireland. We put this animal into Jumper’s hands, who took him away, and in about ten days brought him home again, certainly not looking worse in condition, but perfectly subdued and almost as obedient as a dog: for he would lie down at this man’s bidding, and only rise again at his command, and carry double or anything. I took to riding him myself, and may say, that I was never better carried for six or eight months, during which time he never shewed the least vice whatever. I then sold him to a Lincolnshire farmer, who said that he would give him a summer’s run at grass, and shew him a very fine horse at the great Horncastle fair.

‘Happening to meet this gentleman the following year, I naturally enough inquired after my old friend. “Oh,” said he, “that was a bad business---the horse turned out a sad rebel. The first time we attempted to mount him, after getting him up from grass, he in an instant threw the man down with the greatest violence, pitching him several yards over his head; and after that he threw every one that attempted to get on his back. If he could not throw his rider, *he would throw himself down.* We

\* Those of our readers who were connected with the contested elections for Yorkshire, will recollect Jumper, covered with orange plush from top to toe, and scampering in every direction over the country. Sometimes he would exchange this for a bear-skin, enveloped in which, and mounted occasionally on a buffalo, he was a most formidable object. He had extraordinary power over animals of various species, for he tamed to the saddle a buffalo for Mr. Tempest, and a pair of rein-deer for harness for Lord Fitzwilliam. But his charm consisted chiefly in fearlessness, and brute force, accompanied by considerable tact. He would generally try rough measures first; and in his perilous encounters with some of his troublesome scholars, had nearly every bone in his body fractured. Sullivan’s method was altogether different—force was rarely resorted to. The enemy surrendered to him at discretion and without a struggle. Jumper, however, seemed to have some charm about him, for when he had, by dint of punishment, striven in vain to conquer an unruly horse in the market-place of Wakefield—he alighted—stood on the near side of the horse—brought the animal’s head almost back to his off shoulder by forcibly pulling at the off rein, and then sternly gazed at him over the withers for two or three minutes. The animal began to tremble, and broke out in a profuse perspiration. Jumper then loosened his hold of the rein, and patted and caressed the horse, who immediately followed him round the market-place perfectly tamed.

could do nothing with him, and I was obliged at last to sell him to go in a stage-coach."

In the next story, Jumper's counterpart and superior, the Irish Whisperer, is brought on the stage, and, although he performs wonders, *he cannot radically cure a restiff horse*. 'At the Spring Meeting of 1804, Mr. Whalley's King Pippin was brought on the Curragh of Kildare to run. He was a horse of the most extraordinary savage and vicious disposition. His particular propensity was that of *flying at and worrying* any person who came within his reach, and if he had an opportunity, he would get his head round, seize his rider by the leg with his teeth, and drag him down from his back. For this reason he was always ridden in what is called a *sword*: which is nothing more than a strong flat stick, having one end attached to the cheek of the bridle, and the other to the girth of the saddle, a contrivance to prevent a horse of this kind from getting at his rider.

'King Pippin had long been difficult to manage and dangerous to go near, but on the occasion in question he could not be got out to run at all. *Nobody could put the bridle upon his head*. It being Easter Monday, and consequently a great holiday, there was a large concourse of people assembled at the Curragh, consisting principally of the neighbouring peasantry; and one countryman, more fearless than the rest of the lookers-on, forgetting, or perhaps never dreaming that the better part of courage is discretion, volunteered his services to bridle the horse. No sooner had he committed himself in this operation, than King Pippin seized him somewhere about the shoulders or chest, and says Mr. Watts (Mr. Castley's informant,) "I know of nothing I can compare it to, so much as a dog shaking a rat." Fortunately for the poor fellow, his body was very thickly covered with clothes, for on such occasions an Irishman of this class is fond of displaying his wardrobe, and if *he has three coats at all in the world*, he is sure to put them all on.

'This circumstance in all probability saved the individual who had so gallantly volunteered the forlorn hope. His person was so deeply enveloped in extra-teguments, that the horse never got fairly hold of his skin, and I understand that he escaped with but little injury, beside the sadly rent and totally ruined state of his holiday toggery.

'The Whisperer was sent for, who having arrived, was shut up with the horse all night, and in the morning he exhibited this hitherto ferocious animal, following him about the course like a dog---lying down at his command---suffering his mouth to be opened, and any person's hand to be introduced into it---in short, as quiet almost as a sheep.

'He came out the same meeting, and won a race, and his docility continued satisfactory for a long time; *but at the end of*

*about three years his vice returned, and then he is said to have killed a man, for which he was destroyed."*

It may not be uninteresting in this connexion, to give some account of this tamer of quadruped vice. However strange and magical his power may seem to be, there is no doubt of the truth of the account that is given of him. The Rev. Mr. Townsend, in his Statistical Survey of Cork, first introduced him to the notice of the public generally, although his fame had long spread over that part of Ireland. We, however, give the following extract from Croker's *Fairy Legends and Traditions of Ireland*, Part II. p. 200, for the fact seems the work of some elfin sprite, rather than of a rude and ignorant horse-breaker.

'He was an awkward, ignorant rustic of the lowest class, of the name of Sullivan, but better known by the appellation of the *Whisperer*; his occupation was horse-breaking. The nickname he acquired from the vulgar notion of his being able to communicate to the animal what he wished by means of a whisper, and the singularity of this method seemed in some degree to justify the attribute. In his own neighbourhood, the notoriety of the fact made it seem less remarkable, but I doubt if any instance of similar subjugating talents is to be found on record. As far as the spere of his control extended, the boast of *veni, vidi, vici*, was more justly claimed by Sullivan than by Cæsar himself.

'How his art was acquired, and in what it consisted, is likely to be for ever unknown, as he has lately (about 1810) left the world without divulging it. His son, who follows the same trade, possesses but a small portion of the art, having either never learned the true secret, or being incapable of putting it into practice. The wonder of his skill consisted in the celerity of the operation, which was performed in privacy without any apparent means of coercion. Every description of horse, or even mule, whether previously broken or unhandled, whatever their peculiar habits or vices might have been, submitted without show of resistance to the magical influence of his art, and in the short space of half an hour became gentle and tractable. This effect, though instantaneously produced, was generally durable. Though more submissive to him than to others, they seemed to have acquired a docility unknown before.

'When sent for to tame a vicious beast, for which he was either paid according to the distance, or generally two or three guineas, he directed the stable, in which he and the object of the experiment were, to be shut, with orders not to open the door until a signal was given. After a *tête-à-tête* of about half an hour, during which little or no bustle was heard, the signal was made, and, upon opening the door, the horse appeared lying down, and the man by his side, playing with him like a child with a puppy dog. From that time he was found perfectly willing to submit to any discipline—however repugnant to his na-



ture before.' 'I once,' continues Mr. Townsend, 'saw his skill tried on a horse, which could never before be brought to stand for a smith to shoe him. The day after Sullivan's half hour's lecture, I went, not without some incredulity, to the smith's shop, with many other curious spectators, where we were eye-witnesses of the complete success of his art. This, too, had been a troop horse, and it was supposed, not without reason, that after regimental discipline had failed, no other would be found availing. I observed that the animal appeared terrified whenever Sullivan either spoke or looked at him; how that extraordinary ascendancy could have been obtained, is difficult to conjecture.

'In common cases this mysterious preparation was unnecessary. He seemed to possess an instinctive power of inspiring awe, the result, perhaps, of natural intrepidity, in which, I believe, a great part of his art consisted; though the circumstance of the *tête-à-tête* shows that, on particular occasions, something more must have been added to it. A faculty like this would in some hands have made a fortune, and I understand that great offers were made to him, for the exercise of his art abroad. But hunting was his passion. He lived at home in the style most agreeable to his disposition, and nothing could induce him to quit Duhalloo and the fox hounds.'

Mr. Castley witnessed the total failure of the younger Sullivan. He says, 'We have in the regiment a remarkably nice horse, called Lancer, that has always been very difficult to shoe, but seven or eight years ago, when we first got him, he was downright vicious in that respect. When the regiment was stationed at Cork, the farrier-major sought out the present Sullivan, the son of the celebrated Whisperer, and brought him up to the barracks in order to try his hand upon Lancer, and make him more peaceable to shoe; but I must say this person did not appear to possess any particular controlling power over the animal, more than any other man. Lancer seemed to pay no attention whatever to his charm, and, at last, fairly beat him out of the forge. Time, however, and a long perseverance in kind and gentle treatment, have effected what force could not. The horse is now pretty reasonable to shoe.'

(To be continued.)

## ART. XLIX.—On Gardening—No. 2; by ALEXANDER GORDON.

[FROM THE GENESEE FARMER.]

In forming a hot bed, the first point to be determined is the size required for the frame. Having ascertained this, allow from six to eight inches wider and longer for back, front, and both ends; fix on the proper situation, invariably building the beds lengthways due east and west, which will concentrate the greatest portion of the sun's rays on the sashes of the frame. Then drive four stakes in the ground, one at each corner of the intended bed, and commence placing the manure within or parallel with the limits of those stakes. In building the bed, the great point to be attended to is the properly shaking and separating the materials, otherwise the bed will settle in an irregular manner, and the heat would not be by any means uniform. As the building of the bed advances, give it a regular beating with the back of the dung fork, raising the handle in a slanting direction. At the height of two feet or two feet and a half, place an extra tier of dung on the back or north part of the bed, raising it to the height of three feet, and give the whole surface a gradual slope to the south side of the bed. In finishing this last tier, shovel up all the short manure round the bed, and spread it regularly on the top; beat the sides and ends with the back of the dung fork until they are quite even, which will give its exterior a neat appearance. When the whole is finished, place the frame on the bed, leaving an equal margin on all sides, outside the frame; put on the sashes and keep them closely shut for a day or two, until the heat rises, when it will be necessary to lift the sashes at the north end an inch or two, to allow the rank gases to escape. Put a barrow load of good, rich, friable mold in the centre under each light, and as soon as the air in the bed becomes sweet, (which will be easily ascertained by the smell) plant four or five cucumber seed, *Cucumis sativa*---or melon seeds, *Cucumis melo*, whichever is the intended crop, on the top of each hill, covering with nearly an inch of mould. The nearer the mould of those hills resembles a cone in shape, so much the better. In a few days the plants will appear, and attention must be given to admit fresh air, every mild day, by tilting the sashes from half an inch to one or two inches, according to the influence of the sun and the temperature of the external atmosphere; otherwise the plants would grow weakly, or what gardeners term "*drawn*." As the roots of the plants become visible on the outside of the mold, add more and more, as required, until the whole bed is covered eight or ten inches, during which time the plants will require moderate waterings, which should be applied, as near as possible, at a temperature the same as the air in the frame.

When the plants have put out their *rough* leaves, select two of the strongest under each light, and take the weaker plants entirely away---two plants will be amply sufficient to fill the allotted space.

For *raising* cauliflower, cabbage, or lettuce plants; *growing* radishes, carrots, &c.; or *forwarding* peas, beans, and other desirable vegetables, every farmer may accomplish this at a very trifling expense. The manure will not require so much preparation, and that material will be equally useful for other purposes, when the young plants are transplanted into their respective situations in the garden. Build the bed in the same manner as directed above for a frame, only not so high; when finished, strong stakes are to be drove in the ground close to the bed, and at a distance of four feet apart round the bed on all sides, leaving them a foot higher than the surface of the bed; to these stakes or posts, boards must be nailed, keeping them level with the top of the post, and to a depth of two feet, which gives an allowance for the bed to sink nearly a foot, and still preserve the board below the surface of the manure. Then cover the whole surface of the bed with six or eight inches of good, rich, dry mould, and the seeds may be sown at once.

Cauliflower, *Brassica oleracea var botrytis*---Allot a sufficient portion of the bed for the quantity of plants required, and sow the seeds regularly over the surface, covering them nearly three-fourths of an inch with fine, dry, light soil, and if sifted through a coarse sieve, so much the better. The cauliflower is a most delicious vegetable, and deserving of general cultivation.

Cabbage, *Brassica oleracea capitata*---comprises a tribe of vegetables two well known, and too generally esteemed, to require any eulogium here. In sowing on a hot bed as an early crop, observe the same method as described for the cauliflower.

Lettuce, *Lactuca sativa*---is a hardy, useful and wholesome vegetable, either as a salad or for soups. In sowing these seeds, a less quantity of soil for covering the seeds must be given than for either cauliflower or cabbage, but in every other respect the treatment must be the same.

Radishes, *Raphanus sativus*---and carrots, *Daucus carota*---when they are required early, may be sown on a bed prepared as above. The best sorts for this purpose are the early frame radish and the early horn carrot, which comes much earlier, but as respects size, is very inferior to the other varieties of the carrot.

Peas, *Pisum sativum*---beans, *Vicia faba*---kidney beans, *Phaseolus vulgaris*, &c.; to be forwarded a stage in their growth, but finally grown in the open ground, may be sown as follows: cut a quantity of turf into pieces about twelve or fourteen inches long, and three or four inches wide, place them in a regular manner, over the surface of the bed, grass side downwards. Sow a

row of peas, &c. upon each row of turf, and afterwards cover the whole with two or three inches of light, dry soil. To prevent a further reference to this subject, I shall here add; at the proper time for transplanting, (when they are three or four inches high) lift out the turf, piece by piece, with the peas, &c. growing upon it; plant them where they are to produce their crop, and draw fresh soil to them. By this method the roots receive no injury, neither do the plants receive the least check in transplanting. Potatoes may be forwarded in the same manner, and the extra trouble will be rewarded by crops at least a week or two earlier. But to return to the management of the seeds while in the nursery bed. After the seeds are properly covered with soil, the beds should be covered with mats, (cauliflowers, cabbages, &c. &c. the same) boards and litter or straw, or any other suitable covering, every night, and even in the day time during severe weather. There is one very essential point which deserves a few remarks, as respects the covering of such temporary frames, or in protecting individual plants, or groups of plants in like manner; that is, never to allow the mats, &c. to come in contact with the substance they are intended to protect. It should always be kept at a distance of from six to eight inches. The *rationale* of this will appear evident, when we consider that heat is given out by all bodies in straight lines or rays, as light flows from the sun; that the rays of heat may be reflected back again by any body, however thin; and that any covering, whether thick or thin, placed in close contact with a heated body, will not reflect back its heat, but, on the contrary, if of a dark colour, will promote its escape by radiation. This is a primary consideration in every experiment in acclimatizing exotic plants, or in sheltering those we are forwarding by artificial means.

It is not my intention in prosecuting my future remarks on gardening, to introduce many directions as to forcing, but that every thing may be applicable to the season as far as possible, I have considered it advisable to offer the preceeding observations. My principal object, however, is to lay before the readers of the *Genesee Farmer* the simplest and easiest modes of cultivating vegetables, shrubs and flowers, and discriminating as far as practicable, between the various sorts of vegetables, &c. selecting those best adapted for this section of the country, hoping by these means to enhance the taste for the different branches of gardening, which I am happy to say is progressing with a rapidity truly gratifying to the lovers of the art. In pursuing this plan, I would here most particularly recommend system in every pursuit, and in the performance of every operation. System is a subject of so much importance that it cannot be too often recommended: by previously determining what crops are to be raised in each compartment, or division of the garden, we



shall commence, progress and finish in a regular systematic manner; our every operation will follow in proper order, and considerable labour will be saved in the execution.

The borders recommended round the garden in last week's paper, will answer for the choicer sorts of vegetables, or for a small portion of the grosser sorts, which we may desire early, such as lettuce, spinach, early carrots, radishes, early potatoes, peas, &c. The four quarters, or grand divisions for the several crops of peas, beans, carrots onions, cabbages, cauliflowers, brocolis, beets, parsnips, potatoes, asparagus, sea-kale, &c. &c. A border of from three to four feet wide should be left all round each of these quarters, if the garden exceeds half an acre, (but only on each side of the center walks if it does not contain that quantity of ground) and planted with ornamental dwarf shrubs and showy flowering plants, which will afford a source of enjoyment, and create a relish for the beauties of nature. The best sorts of vegetables, shrubs and flowers with the proper times for sowing, and the most approved methods of cultivation, shall therefore form the subjects of my future communications on gardening.

Very respectfully,

ALEXANDER GORDON.

*Rochester Nursery, Main-st. March 18, 1833.*

P. S.---No time should be lost in selecting and cutting the *scions* or grafts which are intended for engrafting this spring. It is necessary that the *scion* should be detached several weeks before it is inserted on the intended stock. Scions should be shoots of last season's growth. The outside or lateral branches are preferable, if from healthy trees. By cutting the grafts before the season for grafting arrives, the stock has the advantage over the graft in forwardness of vegetation, which is very essential in effecting a quick adhesion.

A. G.

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ART. L.—*Vegetable Physiology*; by ULMAS.

To check the growth of Fruit Trees and promote their Fruitfulness.

[FROM THE GENESEE FARMER.]

In page 42, of this volume, it is an inquiry by the editor, of "what will check the too free growth of fruit trees, so as to produce fruit buds, flowers and fruit? and if separating a part of the roots from the stock would produce the effect?"

These are important inquiries, and I will try to answer them, my own experience having fully illustrated the example stated, and its remedy.

In order to a full understanding of the subject, we must inquire:

1. Into the cause producing the effect, viz: the two rapid growth of the wood, and its consequent unfruitfulness; and
2. The legitimate and physiological treatment necessary to obtain the desired result.

Trees, and in fact all vegetables, have, like animals, three distinct periods of existence, viz: youth, maturity, and decay. Youth may be termed that period in which the tree is growing to a bearing state, the time consumed for which depends much on its treatment and kind. Maturity is the term in which it yields its fruit; and decay, finally, but almost imperceptibly, follows sooner or later, and at last puts an end to its existence.

These three states, or periods, may be measurably retarded, or accelerated, by artificial causes. The young sapling, healthy and fresh from the nursery, planted into a kindly soil, and cultivated with attention, throws out and expands its vigorous shoots for many years. It finally, although it may seem a protracted time, arrives at its bearing age, and yields its annual supply of fruit, bountiful in proportion to its stature, and through a succession of years proportioned to its former term of youthfulness; and even age, as come it finally must, seems hardly willing to arrest its bounty, and lingers with tardy pace ere its withering hand is laid upon it. This I conceive to be the most natural and profitable course of all fruit bearing trees. I know that many people are in great haste to have their fruit trees yield their long expected reward, and in constant expectation of receiving it, have cultivated and treated them with much care. They are, to be sure, highly gratified in their exuberant growth, and if in a few years they do not yield a corresponding supply of fruit, are often apt to complain.

Now, on the principles of vegetable physiology, the complainants are erring, and the tree right. They, for the purpose of getting fruit soon, stuff the tree with vegetable nutriment almost to repletion. The tree, in its turn, understanding well its own proper functions, thrives apace, intending *at a proper time*, to

pay principal and interest for the kindness thus heaped upon it, and which it assuredly will do if suffered. But the owner is impatient for his fruit, and prunes and nurses the tree, wondering why it does not yield him fruit, and perhaps even threatens to destroy it for its perverseness. The simple fact is, the tree is not ready. It has not arrived at maturity, and is prevented from yielding fruit from the very nourishment and fulness continually received from the hand of its cultivator. This I assume to be the natural state of the tree. But the object, as I infer from the questions at the head of this article, is, to obtain the fruit before the tree arrives at maturity, or, more technically, *to force it*.

The question now recurs, will you remedy it by cutting off a part of the roots?

By no means. The tree has no more roots than are necessary for its support, and would be much injured by parting with a share of them. Besides I am unable to account, on physiological principles, how the cutting off a part of its roots will throw fruit buds into the top of the tree. The production of flowers and fruit require as liberal supplies of sap as that of wood, and if the source of supply be cut off, viz. the root, from whence is the supply to come?

But I proceed to consider the second inquiry, to wit: "to check the exuberant growth of wood, and cause it to produce fruit buds, flowers and fruit."

I shall assume that the trees are of well known kinds, and whose bearing qualities have been tested, and that they are situated in an open and well cultivated ground, as I believe the *whole* complaint can be made under no other circumstances. The trees have also been well pruned, and are accommodated with a good shaped head for bearing, and of fair size. My answer is: *Lay your ground, on which your trees stand, well down to grass, and let it remain so for several years.* The next year after seeding the ground, the growth of young wood will be much diminished, and fruit buds will form in moderate quantities; flowers and fruit will follow the next season. That year, if the tree be an annual bearer, an increased number of fruit buds will be found, and so continue in annual succession. If, after a few years, the tree is too stationary in its growth, for it certainly will not throw out young wood very rapidly, plough, and cultivate, and manure the land, and you can supply the trees with any amount of young wood required, although the bearing will still continue in an abated degree. If you find your trees get too thrifty, you have only to seed down again, and manage as circumstances may require.

That this method has been tried with success I know, for I did it myself some years ago, and am indebted partly to accident for the discovery. About the year 1817, my father had an orchard which, when planted, nearly surrounded his garden, and

which was used mostly for mowing ground. The trees were young, perhaps fifteen years old, and had grown tolerably well. A few years before the time I speak of, the garden had been enlarged on two sides, which took, on each side, a row of apple trees within the fence. The land being well cultivated, the trees grew astonishingly; and not being pruned, acquired immense heads, and bore little or no fruit, while those in the meadow, although of a much less size, bore abundantly. I was then a boy of eighteen years old, and the trees were delivered over to my care, "to prune into good order." I had read "Forsyth on Fruit Trees," and supposed I knew all about it; so at it I went, with the ax and saw, and took out full one-third of their tops, supposing that they would now go to bearing at once. But not so. They grew as before, and bore *a little better* than they had done. I confess I knew not what to do, although, if I had let them alone, they would have borne, when "their time come," all the better for it; yet I was impatient for their fruit. At length the plan suggested itself to seed down the ground where they stood to grass. It was done, and in a short time their growth was nearly stopped, and they bore abundantly of the finest apples.

They are now, for I saw them two years since, much the finest of all the trees in the orchard, from the benefit of having a rapid growth in their youth; and the others, from growing less rapidly when young, and bearing so much sooner, have a much older appearance, and were the ground in which they stand not occasionally ploughed and cultivated, would soon bear evident marks of decay.

This matter must now be accounted for on rational principles, and it may truly be hard to compel a person to say what makes the tree bear wood one year and fruit the next, when the whole process is hidden in the earth, and a profound secret of nature. I will, however, state my own opinion, and others may judge of its correctness.

While trees are young, their roots expand and run near the surface of the earth. If the ground be cultivated, the earth is warm and light, and the roots absorb much nourishment, and a rapid growth of young wood is the sole consequence. In process of time, as the tree increases in size, the roots find their way deep into the earth, where the temperature is lower, and its growth is by degrees checked; fruit buds are consequently formed, and the tree comes into the bearing state. Now, putting land into grass has the same effect. The sun is hidden from the earth. The temperature is lower; the richer nutritious gases of the soil are absorbed by the grass, and the same result is produced as if maturer age had forced the roots more deeply in the ground.

ULMAS.

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ART. LI.—*The Vine—the improving of our Native Grapes; by*  
W. W. B.

[FROM THE GENESSEE FARMER.]

However desirable the acclimating of the European grape in our country may be, there is yet another object of importance, and which promises success even if the other fail: it is *the improvement of our native varieties* in the quality of their fruit. Several have been brought into notice confessedly valuable, but which will not be acknowledged equal to the best European grapes. Any improvement, therefore, that may be made in the quality of their fruit, is of no small moment. The grape, taken from its native wilds, undergoes but little change by cultivation. How then shall we improve the quality of its fruit? By sowing the seed and producing new varieties? Some improvement may be hoped to be made in this way. Our list of choice American grapes may be thus increased; and it is possible that some may be produced superior to any that are now known. It is certainly worthy the attention of our cultivators. But the mode we are about to suggest, which we think will insure success, is to cross our native grapes with the choicest European varieties, and from hybrids. The sexual system holds as complete throughout the vegetable as the animal kingdom; and the offspring in the one is as capable of improvement as in the other, according to the quality of the parent which contributes or receives the fecundating principle. Florists and horticulturists have availed themselves of this general law for improving some of their productions, taking two varieties of the same species, or two species of the same genus, and crossing them by artificial means when in flower, thus combining what is excellent in both; the florist uniting delicacy or brilliancy of tints with magnitude of flower, beauty of foliage, or luxuriance of growth. It is thus that some of the most splendid varieties of the geranium have been produced. Darwin mentions an ingenious experiment of Mr. Knight, in which he produced several new and valuable varieties of the garden pea by impregnating the stigmas of the flowers of one variety with the *farina* or dust from the anthers of another, and suggests, for the improvement of the apple, that "where new varieties are required, the male dust of one good variety, as of the nonpareil apple, should be shed upon the stigmas of another good variety, as of the golden pippin, and it is probable that some new excellent variety might be thus generated." A similar experiment was not long since noticed in the *Genesee Farmer*, of the production of a new and valuable variety of Indian corn, by crossing the early golden Sioux with the Tuscarora. It is impossible to say to what degree of perfection we may thus ar-

rive in the production of fruits and vegetables. Our native grapes, embracing several species and many varieties, have some excellent properties which the foreign grape does not possess; as the hardy texture of its wood, which adapts it to our varied climate, and the luxuriance of its growth. On the other hand, the European grape possesses a decided advantage over the American in the thinness of its skin, the absence of pulp, and the richness and abundance of its juices. By crossing them, and producing hybrids, we propose to combine the excellencies of both; form a vine which is equally hardy with any of our native varieties, and whose fruit in quality will be very little inferior, if not equal, to the choicest foreign kinds. Let the best varieties of our American grape be taken, as the Isabella, Alexander, Scuppernong, Catawba, Red Bland, &c., and crossed with the varieties of the European grape most esteemed for the table and for wine, as the Chasselas, Frontignac, Burgundy, &c. To insure success, the operation should be performed with care and nicety. Before the flowers are fully expanded, and the anthers ready to shed their dust, the anthers should be carefully removed. The flowers thus served should be effectually covered or inclosed, to prevent the farina or dust from the neighbouring flowers coming in contact with them. Take the flowers of the kind which you wish to cross with, when full blown, and gently rub the dust of the anthers on the stigmas of the flowers from which the anthers have been removed. The seed from these flowers thus impregnated will be a mixture of the two, and combine the properties of each. As the European vine is a distinct species from our American varieties, the product will be a hybrid or mule. A query arises: Would this hybrid produce fruit? In the animal department, we know the hybrid or mule will not propagate its kind. The hybrid of some plants, as the geranium, will produce flowers but no seed. How far this law holds in the vegetable department is unknown to the writer, but he is of opinion that, as there is such a near relationship between all the species of the grape family, their hybrids would produce fruit, if not seeds capable of growing. But this last would be of but little importance, as the new variety might be increased to any extent by cuttings, layers, &c. I know not that we have any hybrids. The Red Bland was at one time supposed to be such, the product of an American with an European species, but cultivators are now generally of opinion that it is a genuine American species. The subject, we think, is worthy the attention and experiment of our cultivators, and we shall be happy if it results favourably.

W. W. B.

P. S. Since writing the above, I have fell upon the following passage in Nuttall, in which the same opinion is advanced. "It is probable," says this accomplished naturalist, "that hybrids,

betwixt the European vine and those of the United States, would better answer the varied climates of North America, than the un-acclimated vine of Europe."

W. W. B.

*Hammond's Port, February, 1833.*

ART. LII.—*Planting Ground to the Greatest Advantage.*

[FROM THE LIBRARY OF AGRICULTURAL AND HORTICULTURAL KNOWLEDGE.]

A correspondent (Mr. Howden we believe) in the 17th number of the *Gardner's Magazine*, thus describes a very ingenious "plan for planting a piece of ground to the greatest advantage." In the winter of 1814-15, on account of some alterations of roads, plantations, &c. a piece of land dropped into my hands, of an awkward shape for tillage, and rather too small for pasture; I therefore concluded to introduce a little spade husbandry; as the house was pretty near to the farm-yard, the intercourse or advantages betwixt them would be reciprocal. Accordingly, having no gardeners, I set farm labourers to make so many ditches, 4 feet wide, and 2 feet deep, at every twelve yards, clear across the whole, the turf and good soil were thrown on one side, and the bad soil on the other. The labourers wondered what such ditches could mean, as they were as wide at bottom as at top, and particularly, when I ordered them to be filled up a foot thick with fresh farm-yard manure: and the turf, and what little good soil there was, chopped and thrown on the top of the dung. I had prepared a compost of turf and dung the year before, which was laid upon the whole, about nine inches thick, in which I planted fruit trees in the following order: at every six feet, in the centre of what I now call a border, was planted a standard, then a gooseberry, then a currant, then a dwarf, then a currant, then a gooseberry, then a standard, &c. I was not so particular as some are in my choice of fruit trees; I gave my nurseryman a kind of roving commission, to send me a couple of each of such as he could recommend, then added two, four, six, or eight of such as I could recommend myself. On the edges of the borders I planted rows of strawberry plants, six inches apart, which I have only renewed about twice in ten years; the fruit is always excellent, and supplies a large family all the strawberry season, which saves much garden ground for that crop. The space betwixt the borders, I cultivated at my leisure; some were appropriated for nursery ground, some for potatoes, peas, cabbages, &c.; some for experimental agriculture, lucerne, mangold wurzel, &c. The orchard has succeeded beyond my utmost expectations. I had forty-eight apples from two Keswick Codlins the first year, but have never had patience to count them since; last year I had at

least seven bushels off the same two trees! Six dwarf Hawthorn-dens produced above fifteen bushels, and I have, at this moment, two bushels of Wyker pippins from one graft of my own putting in, only ten years ago. Two Dumelow's seedlings, planted 12 years ago, produced at least eight bushels of beautiful fruit scarcely one of them less than ten inches round, and many of them 12. The Nonpareils are a very similar crop; as for the Mank's apple, &c. there are generally as many apples as leaves; and when in blossom they seem an entire bunch of flowers.

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ART. LIII.—*Fattening Beef; by A FARMER.*

[FROM THE KENNEBEC FARMER.]

“Monmouth, February 15, 1833.

*Mr. Holmes*,---I wish to communicate a few observations through the columns of your useful paper, in regard to fattening beef. Much of the beef made in this vicinity, is from cows which, through age, have become unfit for the dairy, and from oxen which are worn out with hard labour. It is customary to milk the cows until August or September, and as soon as they can be dried of their milk, begin to feed them, first with green corn stalks, small corn, potatoes and meal; and the value of the feed given them is generally much more than the value of the beef when slaughtered. The oxen intended for beef are generally worked in the spring as long as they are able to drag the plough, because it is the last spring's work which they will do, for the owner intends to fatten them.

Now all this appears to me wrong. If those who have old cows which they intend to fatten, would dry them of their milk before they go to the pasture in the spring, and let them have a good pasture and plenty of salt, they will find that they will have much better beef than that which is made from vegetables in the fall, and much cheaper; and a cow thus fattened will have double the quantity of tallow, of those which are milked through the summer. The old and worn out oxen intended for beef, should be kept through the winter and spring, and corn or meal freely given them, so that they may be in good case when they go to the pasture; one bushel of corn or meal given them in the spring is worth two in the fall. Let them have a good pasture and bleed them once a month or oftener, take but a small quantity of blood at a time. In this way the farmer will find he is amply compensated for the loss of milk from his old cow and for the labour of his worn out oxen.

A FARMER.

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## PART III.

### MISCELLANEOUS INTELLIGENCE.

**Cotton Seed Oil Factory.**—"It is with great pleasure that we have it in our power to announce to the southern planter, the success of the firm under the name of *Samuel A. Plummer & Co.* (consisting of the above named gentleman, his brother, and our old and well-known friend, Major Anderson Miller) in the completion of their extensive *Cotton Seed Oil Factory*; and which enterprise may be considered the commencement, in this section of the United States, of a new era; and bids fair to make the cotton planter the most independent of agriculturists.

"It is with astonishment, that we, for the first time, examined this immense undertaking. It is but a few monthssince, that the Company commenced this truly important enterprise. They have now a substantial building, eighty-four by eighty feet, one and a half story high, completed; a steam engine of twenty-two and a half inch cylinder and five feet stroke, in full operation, driving eight hulling machines; five set of stones and a machine to prepare and grind the kernel for heating; eight cylinders for heating the meal; a cam and seven lever presses in proportion, to carry on the business with despatch, and to the saving of manual labour. Every thing belonging to the establishment is new and bright, and moves with the greatest accuracy imaginable. The establishment is the largest for making of oil perhaps ever built in the United States. It is capable, we learn, of making from one to two thousand gallons per day.

"There are but two other mills in the United States for making oil from cotton seed; one in Petersburg, (Va.) and the other in North-Carolina—both on a very small scale, scarcely more than a tenth as large as that we have described in this city of Natchez.

"The making of most excellent oil from cotton seed is now no longer a matter of experiment. The business is reduced to a certainty; one bushel of seed will make three quarts of oil. The oil is tested beyond the possibility of doubt, as being easily refined, and answering as well as the very best winter strained sperm oil for lamps, without the least disagreeable smell, answering admirably for woollens, machinery, &c.

"We learn, further, that Samuel A. Plummer, Esq. has made arrangements to put up a similar establishment in Florence, also in Mobile, Alabama, to the one we have described. Most heartily we wish him success, equal to that which he experiences here, and the same liberality will be extended to him by our fellow-citizens of Alabama."—*Miss. Jour. & Adv.*

**Market for Cocoons.**—The public will no doubt be gratified with the information, that a silk filature is to be established in Baltimore, and that a market for cocoons will thus be secured. Mr. Hitchcock, the proprietor of the American Farmer, is authorised to purchase cocoons for the filature, and to pay from twenty-five to fifty cents a pound for them, according to quality. This

is the full value of cocoons, and editors in the interior will no doubt do the *country* and the *cause* essential service by giving circulation to this paragraph through the medium of their papers. This may also be considered an answer to numerous inquiries where a market for cocoons can be found, and the price they will command.—*Amer. Far.*

**Interesting Experiment.**—In the January number of Silliman's Journal, in an article translated from the *Bibliothèque Universelle*, is given the results of some experiments performed by the celebrated agriculturist De Dombasle for determining the relative nutritive value of the aliments of sheep and cattle. An abstract of the article is here given.

Forty-nine sheep were divided into seven lots, of seven sheep each, in such a manner that the total weight of each lot should be, as nearly as possible, equal to each of the rest. Each lot was kept in a separate division of the stable, the food was given to each lot in rations of equal weight, and by means of scales, the total weight of each lot was taken once a week, and the experiment was continued five weeks. The weight of each lot was four hundred and thirty-six pounds.

The substances subjected to examination were 1. Dry lucern. 2. Oil cake from flax-seed. 3. Oats and barley. 4. Crude potatoes. 5. Cooked potatoes. 6. Beets. 7. Carrots.

One of the seven lots was fed exclusively on dry lucern, of which fifteen pounds were found to be a proper ration of one sheep per week. Each of the six others received just half the quantity of lucern, or seven and a half pounds, and the remainder of the ration consisted of such a portion of the other alimentary substances, as was found sufficient by a careful weighing during the five weeks, to keep each lot in the same healthy condition. Of these substances, the following quantities were found to be equivalent in nutritive value to the half ration of lucern.

Oil cake,.....	4½ pounds.
Barley,.....	3½ "
Oats,.....	5 "
Crude Potatoes,.....	14 "
Cooked Potatoes,.....	13 "
Beets,.....	16 "
Carrots,.....	23 "

The quantity of water drunk by each lot of sheep, measured by a gaged trough during the five weeks, was as follows, showing the relative degree of thirst occasioned by the different aliments.

1st lot,.....	223 quarts.
2d lot,.....	189 "
3d lot,.....	164 "
4th lot,.....	123 "
5th lot,.....	108 "
6th lot,.....	95 "
7th lot,.....	36 "— <i>Gen. Far.</i>

**Planting Trees.**—It is a well known fact that in all plantations a great number of trees perish, especially in high situations; this sometimes proceeds from want of care in raising them, &c. &c. But there is another and more extensive cause, against which I am about to propose a remedy, which repeated trials and the experience of many years have proved effectual. The roots of trees newly planted, not having time to fix themselves firmly, the trees are liable to be shaken by every blast; accordingly when the wind rises, the tree bends with it, and (the soil not being elastic) leaves a cavity about the trunk, which in winter becomes a receptacle for water; this certainly tends to injure the roots, and when it freezes completely destroys them.

The remedy I recommend is this: when your trees are planted out and properly settled in the ground, throw round the stem of each, a small wheel-

barrow full of coarse sand, or fine gravel as free as possible from loam; whenever the tree is shaken, the sand will roll down, (in the same manner as corn in the hopper of a mill) fill up the void, and thereby prevent the water from lodging, and the roots from perishing.—*Farm. Mag.*

*Feeding Swine.*—Sir—You will oblige an old subscriber, and perhaps benefit the public, by inserting the following:

I observed in your paper, of the 19th of the last month, an article on the feeding of swine, in which was recommended the practice of keeping them constantly penned up. Now, I consider this the very reverse of what ought to be done, for the following obvious reasons: viz. It deprives the animal from enjoying that perfect state of health, which he otherwise would enjoy, if allowed to range at large; and being constantly fed on greasy dish water, and other impure substances, the meat of course have a strong taste, and loose much of its flavour—and hence we see the reason why the citizens always prefer the country pork to that of the butchers, who keep their swine constantly in pens, and feed them on filthy animal substances.

The food of swine should be entirely vegetable, and when allowed his liberty will feed considerably on grass, acorns, chesnuts, apples, cherries, &c. which he is entirely deprived of in a state of confinement. It is true he will fatten much faster, when confined, than when running at large. Just so it is with a human being when confined to his chamber—if not absolutely sick, he will grow fat and fleshy; but it will not be solid, nor will he enjoy as much health and spirits as when he takes daily exercise in the open air. And this is the case, without exception, with all the animal creation; and even the vegetables require the free use of the sunshine, wind and rain, to make them thrive.

The milk of the cow, in a state of confinement, is not fit for use. This I know by experience—for being accustomed to use milk, instead of tea and coffee, and boarding at a tavern in this city, where the cow was kept constantly in the stable all the year, the milk, particularly in the summer, had such a disagreeable sickening state that I could not possibly relish it. For the same reason also, the flesh of wild fowls and animals is much sweeter, and has a finer flavour, than those kept in confinement, because they have free exercise in the open air, drink the pure crystal stream, and live on that kind of food, which nature intended.

But, to conclude, I would observe, that all those who live on small lots, and have no range for swine, are generally obliged to keep them in pens, if they keep them at all; but all farmers, who have a convenience to let them run at large, should embrace the privilege, if they wish their pork sweet and good.

But in the autumn previous to their being killed, it is customary, and no doubt very proper to pen them up a short time, in order that they may fatten the sooner; but during which period, corn should form the principal article of food.

Yours, &c.

A FRIEND TO DOMESTIC ECONOMY.—*Even. Post.*

*Cheap Fodder.*—During the time we were engaged in the pursuit of agriculture, we witnessed the following experiment which we submit to farmers as a very cheap mode of raising fodder for fattening cattle. It answers the double purpose of hay and grain. It is to plough the ground and fit it in the same manner as for a crop of wheat, and then sow corn on it—say, about two bushels to the acre—ploughing and harrowing it in like manner as for wheat or rye. In selecting the ground, that should be preferred which is free from weeds. It will grow (provided the land is strong enough) so as to have short ears and the stalks so small that no feed can be given to cattle which will make them gain faster. We have seen some of the nicest beef we ever saw in any market, in fattening which no other grain was given than that which was raised on the fodder, in the above manner.—*Middlebury Vt. paper.*

**Fresh Grapes.**—About the 1st of March, the editor of the Long-Island Farmer was presented with several clusters of Isabella Grapes of fine flavour and quality, which had been preserved perfectly fresh, and appeared as plump and tasted as delicious as if just taken from the vines. They were preserved in the following manner: When ripe they were carefully gathered in clusters, and the ends of the stems sealed with common sealing-wax to prevent the escape of the vinous fluid through the fractured pores—they were then placed in a jar, gently bedded in saw-dust which had been kiln-dried; and the pot itself then covered and sealed. We are not aware, says the Editor of the Farmer, that this method of preserving grapes is generally known; if it is not, we recommend it to the attention of those who desire the luxury of this species of fruit during the winter and spring —*Gen. Far.*

**Pruning.**—I have had some experience in trimming fruit trees; but it is not improbable that I may yet profitably learn new methods in this business. In cutting off limbs of an inch or more in diameter, I have more commonly had paint or some composition applied to the stumps, and I think with decided advantage. Paint is not so durable as tar boiled with brick dust, or as the indurated tar and grease from the hubs or axles of a wagon; but we have used it more frequently because it was more conveniently obtained. As large stumps must remain exposed for several years before they can be covered by the new wood, they should not be forgotten, but new coatings after the lapse of two or three seasons, should be successively applied.

The importance of this operation, increases with the size of the limb removed; and also with its position on the tree. I know not how we can prevent the trunk of an apple tree from becoming hollow, when a large branch is cut off at the fork, unless we apply an artificial covering to the part. I am aware that trees properly trimmed when young, will not require such excisions; but I am also convinced that among the neglected trees of common orchards, such cases frequently occur.

I have examined several apple trees to-day, from which large limbs had been taken. The painted or covered stumps are uniformly sound, while such as have been neglected, are more or less decayed, according to situation; and may hereafter accommodate the wren, or the blue-bird, with a hole for his nest.

In regard to the season for trimming, I am rather partial to the winter, or indeed to any time when the sap does not flow. The stump being comparatively dry, especially if we defer the coating for a few days I have believed it in a better condition to receive the paint, than when the buds are just opening into leaf. The argument that the new wood immediately begins to cover up the wound, I think possesses but little weight.

D. T.

Greatfield, January 21, 1833.—*Ibid.*

**Preservation of Iron from Rust.**—A mastic or covering for this purpose, proposed by the "*Societe d'Encouragement*," at Paris, is as follows:—Eighty parts of pounded brick, passed through a silk sieve, are mixed with twenty parts of litharge; the whole is then rubbed up by the muller with linseed oil, so as to form a thick paint, which may be diluted with spirits of turpentine; well cleaning the iron before it is applied. From an experience of two years, upon locks exposed to the air and covered daily with salt water, after being coated twice with this mastic, the good effects of the preparation have been thoroughly proved.—*N. E. Farmer.*